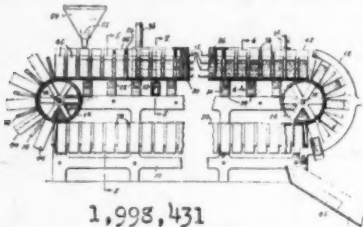


PATENTS

Issued April 23, 1935

1,998,431. METHOD AND APPARATUS FOR FREEZING FOOD PRODUCTS. Clarence Birdseye, Gloucester, Mass., assignor to Frosted Foods Co., Inc., Dover, Del., a corporation of Delaware. Application Nov. 24, 1931. Serial No. 577,047. 17 Claims. (Cl. 62-114.)

6. A refrigerating machine comprising a pair of spaced heat-conductive plates, means for refrigerating the plates, and a

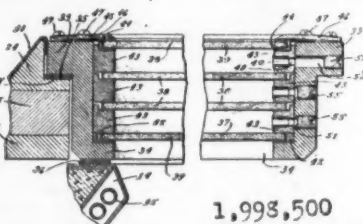


1,998,431

plurality of molds movable between the plates and adjacent thereto, each mold comprising two end walls and a U-shaped member of relatively thin metal therebetween forming the cooperating side walls of the mold.

1,998,500. DISPLAY WINDOW. Edward M. Fritz, Grand Rapids, Mich., assignor to Grand Rapids Cabinet Co., Grand Rapids, Mich., a corporation of Michigan. Original application May 9, 1932. Serial No. 610,091. Divided and this application Oct. 18, 1933. Serial No. 694,049. 2 Claims. (Cl. 20-56.5.)

1. A window for an opening in a refrigerator cabinet comprising a single piece frame moulded as a unit from non-

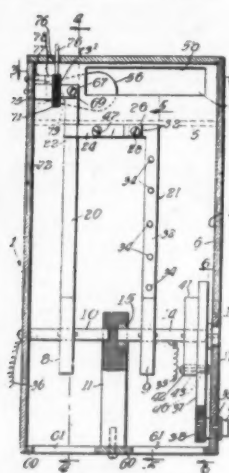


1,998,500

metallic material and including an inwardly extending bottom flange, a plurality of sheets of transparent material superposed in spaced relation and supported by said flange, yieldable sealing gaskets disposed between the adjacent sheets of transparent material, yieldable sealing means of flanged contour disposed outside the top and bottom sheets of transparent material, that outside the outermost sheet of transparent material extending over the upper edge of the frame, and pressure means for exerting downward force simultaneously on the several sealing gaskets, and on that portion of the top gasket extending over the edge of the frame.

1,998,534. HUMIDITY AND TEMPERATURE CONTROL DEVICE. Edward V. Dautel, Chicago, Ill. Application Jan. 30, 1932. Serial No. 589,969. 9 Claims. (Cl. 200-52.)

1. In a mechanism of the kind described, two cooperating thermostatic bars, simulating, respectively, a wet and dry bulb



1,998,534

thermometer, each rigidly mounted at one end, the opposite ends free to respond to changes in the temperature of the surrounding atmosphere, the free ends of

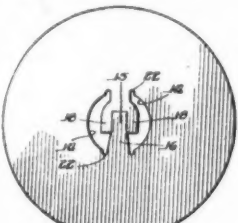
the bars provided with cooperating electric circuit-closing contacts, one of said bars being adjustable in relation to the other for changing the relative humidity of the surrounding atmosphere, means associated with said bars, including the co-operating electric circuit contacts on the free ends of said bars for effecting the relative humidity of the surrounding atmosphere, and temperature responsive means arranged and adapted to automatically adjust the position of the wet bar to compensate for variations in relative humidity due to changes in temperature of the surrounding atmosphere.

1,998,604. DEVICE FOR UNLOADING COMPRESSORS. Edward H. Belden, Detroit, Mich. Application July 23, 1932. Serial No. 624,212. Renewed March 8, 1934. 7 Claims. (Cl. 230-29.)

1. The combination with a compressor, whose casing rotates on a vertical axis and has two ports in its top of which one communicates with the low pressure line and the other port communicates with the compression chamber, of an unloading device comprising a hollow housing open at the bottom and secured to and fitting tight against the top of said casing, and centrifugally actuated, slidable valves for said port respectively, the valve for the compression chamber port being yieldable to the pressure therein.

1,998,664. FINNED EVAPORATOR. Fred R. Erbach, Beloit, Wis., assignor to General Refrigeration Corp., Beloit, Wis., a corporation of Delaware. Application July 10, 1933. Serial No. 679,647. 5 Claims. (Cl. 257-262.)

1. A disc for the purposes described having a center opening therein and prongs integral with the disc and extend-



1,998,664

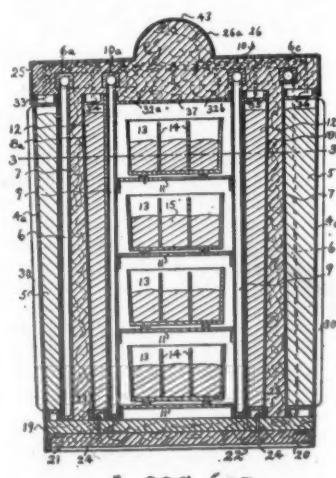
ing from the disc at diametrically opposite points around the opening, said prongs having a length in excess of the radius of the opening, and a bifurcated end on one of said prongs.

1,998,681. REFRIGERATING CONTAINER. John S. Littleford, Jr., Fort Thomas, Ky., assignor to Littleford Brothers, Cincinnati, Ohio, a co-partnership comprising John S. Littleford, Thomas S. Littleford, Roger S. Littleford, John S. Littleford, Jr., and Bernice L. Wadsworth. Application July 29, 1932. Serial No. 625,914. 13 Claims. (Cl. 62-91.5.)

1. A refrigerating metallic lined container having outer walls and an insulating outer covering for said walls, a cover for said container composed of insulative material, and a compartment within said cover for receiving a supply of solidified refrigerant gas, said compartment having a metallic part contacting the refrigerant and removably contacting the metallic lining of the container.

1,998,693. THERMAL PROCESS AND APPARATUS. Gardner T. Voorhees, Boston, Mass. Application May 2, 1927. Serial No. 188,374. 12 Claims. (Cl. 62-178.)

1. In a refrigerating process the method of freezing a low temperature latent heat of fusion substance by conducting heat



1,998,693

therefrom to a low pressure circulating refrigerant fluid, to vaporize it, and freezing a high temperature latent heat of

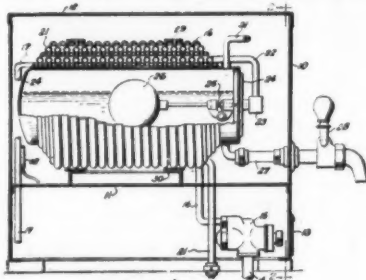
fusion substance by conducting heat therefrom to a high pressure circulating refrigerant fluid, to vaporize it and cooling air by conducting heat from said air to melt a portion of said high temperature substance and freezing water by conducting heat therefrom to melt a portion of said low temperature substance.

1,998,705. ICE CRACKER. John S. Bradley, New York, N. Y., and John W. Dyer, South Orange, N. J. Application Sept. 23, 1931. Serial No. 564,530. 2 Claims. (Cl. 83-63.)

1. A device for cracking ice cubes which consists of a receptacle having two sides, a surface for supporting an ice cube and an abutment adjacent one end of said surface and at substantially a right angle thereto for limiting the movement of the cube in that direction, a cracking element supported between the sides and having a cracking surface swingable simultaneously towards said supporting surface and towards said abutment to crack a cube held therebetween.

1,998,748. APPARATUS FOR COOLING AND DISPENSING CARBONATED BEVERAGES. Joseph Askin, Buffalo, N. Y., assignor to Fedders Mfg. Co., Inc., Buffalo, N. Y. Application Feb. 18, 1933. Serial No. 657,417. 2 Claims. (Cl. 62-141.)

1. In a dispensing device for carbonated beverages, beverage supply means, a reservoir, a pair of pipe coils wound about



1,998,748

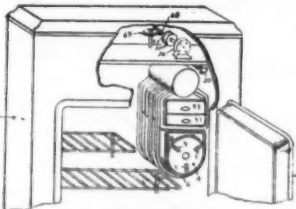
and substantially covering the exterior thereof, one of said coils having one end in communication with said supply means and its opposite end in communication with the reservoir, the remaining coil being adapted to receive and convey refrigerant in heat exchange relation with said reservoir and first coil, means for maintaining a predetermined beverage level in said reservoir, a manually operable valve for controlling withdrawal of beverage from the reservoir, and pressure release means for venting gas and maintaining a predetermined pressure in said reservoir.

1,998,818. THERMOSTAT. Robert E. Newell, Irwin, and Clarence W. Robertshaw, Youngwood, Pa., and William B. Mackintosh, San Francisco, Calif., assignors to Robertshaw Thermostat Co., Youngwood, Pa., a corporation of Pennsylvania. Application April 3, 1934. Serial No. 718,758. 8 Claims. (Cl. 238-15.)

1. A thermostatic structure comprising control means, a thermostatic unit for operating said thermostatic unit including a housing thereof, adjusting means carried by said thermostatic unit, and clamping means within said housing accessible from the outer end thereof for rigidly securing said thermostatic unit and said housing rigidly to said control means.

1,998,841. FOOD FREEZING ATTACHMENT FOR MECHANICAL REFRIGERATORS. Lowell G. Modlin, Huntington, W. Va., assignor of 25 per cent to S. J. Hyman, 12 1/2 per cent to C. M. Farrington, 6 1/4 per cent to Thorne V. Smith, and 6 1/4 per cent to A. L. Barnett. Application Nov. 8, 1933. Serial No. 697,100. 8 Claims. (Cl. 62-114.)

1. A food freezing attachment for motor operated mechanical refrigerator, comprising a container open at one end, pro-



1,998,841

jections on the side walls of said container, a lid cooperating with the open end of said container and having a central perforation, a dasher having a shaft within said container, one end of said shaft projecting through the opening in said lid, a casing surrounded by refrigerant conduits, guides within said casing cooperating with said projections on said container, means for limiting longitudinal and rotary movements of said container within said casing, a power shaft rotatably mounted on said refrigerator for rotating said dasher shaft, a shaft for the refrigerator motor, means including a clutch for coupling said motor shaft with said power shaft, a rod for actuating said clutch, a second rod terminating in an operating handle, a loose follow-up coupling between said rod and said second rod, and a circuit for operating said motor controlled by said follow-up coupling and said first mentioned rod.

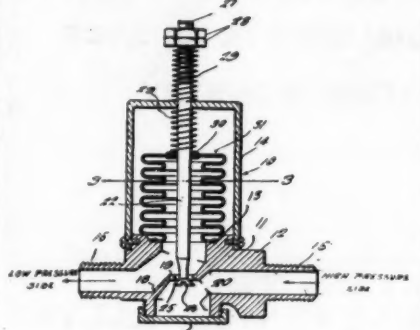
1,998,852. DIFFERENTIAL PRESSURE CONTROL VALVE. Frank Simmons, Central Park, N. Y., assignor of one-half to

COMMERCIAL DOMESTIC and BARE COMPRESSORS
1/6 to 10 H. P.

MERCHANT & EVANS CO.
MANUFACTURERS
PHILADELPHIA
EST. 1866 Plant: LANCASTER PA.

Ross S. McPherson, Hicksville, N. Y. Application March 16, 1934. Serial No. 715,962. 1 Claim. (Cl. 50-23.)

In a refrigerating system, means for automatically closing the pipe line leading to the compressor when crank case pres-



1,998,852

sure in the compressor becomes excessive, comprising a valve casing located in the pipe line, said casing having an opening passing through its top and in communication with the low pressure side of the line, a valve seat formed in the casing and opening downwardly into the high pressure side of the casing for placing the opening in communication with the high pressure side, a one piece valve stem passing through the first mentioned opening and through the valve seat, a valve having a threaded part threaded to the lower end of the stem and moving upwardly against the seat when moving to closed position, a bellows having its lower end connected with the top of the valve casing and surrounding the upper end of the opening and through the top of which the stem passes, means for connecting the top of the bellows with the top of the valve casing and enclosing the bellows and having a hole in its top through which the stem passes, a spring encircling a part of the stem and having one end bearing against the top of the bellows and its other end against the top of the cap-like member, a second spring encircling the outer part of the stem and having one end bearing against the top of the cap-like member and a nut threaded on the upper end of the stem and bearing against the top of the last mentioned spring.

1,998,871. ICE CREAM FREEZER. Albert G. Hetzer, Rush, N. Y. Application Sept. 6, 1934. Serial No. 743,014. 3 Claims. (Cl. 220-57.)

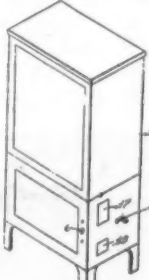
1. In a device of the character described, a tray member having sides provided with sockets opening inwardly thereof, a cover for the tray having on the inner side thereof fixed transverse members having ends extending outwardly beyond one edge of the cover to engage in sockets in one side of the tray, latch members slidably engaged with said fixed members and adapted to be projected beyond the opposite edge of the cover to engage sockets in the side of the tray opposite to the first named sockets, and finger pieces connected with the latch members for projecting and retracting them.

1,998,943. GLOW DISCHARGE MEANS FOR TEMPERATURE CONTROL. Camil A. Sabbah, Schenectady, N. Y., assignor to General Electric Co., a corporation of New York. Application Oct. 31, 1930. Serial No. 492,586. 17 Claims. (Cl. 219-20.)

1. The combination of a glow discharge device, means to maintain a discharge in said device after initiation of said discharge due to drop of the gas pressure in said device, said means being operable only at such time as the pressure of the gas within the device has a value substantially equal to a predetermined value and values below said predetermined value, a heat source external to said discharge device, and means dependent upon heat from said source to vary said gas pressure sufficiently to interrupt said discharge in said device at said value substantially equal to a predetermined value, the initiation and the stopping of said discharge being in response only to said varying pressure due to heat from said source.

1,999,108. ICE CUBE CRUSHER. Francis J. Ouch, Detroit, Mich. Application Sept. 21, 1932. Serial No. 634,205. 7 Claims. (Cl. 62-1.)

1. In a refrigeration cabinet adapted to be cooled by a mechanically operated unit, the combination of a motor adapted



1,999,108

to operate said unit, means for receiving and operating interchangeable household devices, a driving element in said cabinet, means operatively connecting said driving element with said motor, and means for mounting said first named means on said cabinet in coupled relation with said driving element.

1,999,148. AIR-CONDITIONING APPARATUS. Samuel M. Anderson, Sharon, Mass., assignor to B. F. Sturtevant Co., Inc., Hyde Park, Boston, Mass. Application Sept. 7, 1934. Serial No. 743,051. 3 Claims. (Cl. 98-10.)

1. Air-conditioning apparatus for a railway passenger car having a ceiling, comprising an air-conditioning compartment, means for passing air to be conditioned through said compartment, means for supplying a heat exchange medium to said compartment, a main supply duct arranged above said ceiling and extending longitudinally of the car, an auxiliary supply duct arranged below said ceiling, a plurality of relatively small openings in said main duct and extending longi-

tudinally thereof and opening into said auxiliary duct, a plurality of relatively large, spaced openings in a side wall of said auxiliary duct for discharging conditioned air to the passenger space of the car, and deflector plates above said openings in said auxiliary duct for deflecting the discharged air in a downward direction.

REISSUE

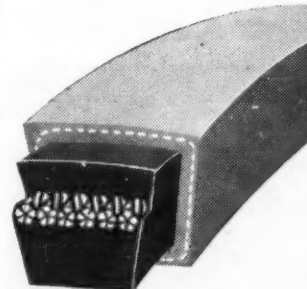
19,545. PRESSURE REDUCING AND REGULATING VALVE. Paul C. Temple, Decatur, Ill., assignor to A. W. Cash Co., Decatur, Ill., a corporation of Delaware. Original No. 1,885,389, dated Nov. 1, 1932. Serial No. 540,869, May 29, 1934. Serial No. 740,653. 14 Claims. (Cl. 50-26.)

1. In a pressure reducing and regulating valve, a structure providing a high pressure space, a control pressure space and a delivery opening, a pressure responsive member subjected to the influence of the pressure in said control pressure space, a spring acting on said member, a valve associated with said member, and a tube affording an aspirating passage between said control pressure chamber and said delivery opening and automatically movable axially of said delivery opening responsive to said pressure responsive member.

19,546. HUMIDIFIER. George O. Toepfer, Milwaukee, Wis. Original No. 1,839,618, dated Jan. 5, 1932. Serial No. 437,355. March 20, 1930. Application for reissue Dec. 26, 1933. Serial No. 704,031. 6 Claims. (Cl. 261-15.)

1. A humidifier for use with a heating plant having a smoke pipe and comprising a casing having a transverse internal partition dividing the casing into an air heating chamber and a vapor generating chamber, said chambers being spaced longitudinally of the casing, said partition terminating short of the top of the casing to provide for flow of the heated air from the air heating chamber into the vapor generating chamber, the ends of the casing and the partition having openings through which the smoke pipe extends, an air inlet into the air heating chamber, means for creating a vapor in the vapor generating chamber and comprising spray nozzles for directing sprays against the portion of the smoke pipe in the vapor generating chamber, and a distributing system connected to the vapor generating chamber.

UNIFORM FLEXIBILITY



MANHATTAN V-BELTS

for Fractional Horsepower
Service are unusually flexible due to their exclusive whipcord construction. No other construction today equals the endless whipcord single layer design for uniform flexibility and strength... The whipcords are held in an inseparable layer between two thicknesses of tie-gum and are placed in the belt in the neutral axis area. The endless whipcord construction has a distinct advantage over other V-Belts. Test Manhattan V-Belts on your drives. To eliminate noise — specify Manhattan.

For complete literature, write the factory or any of the following Sales Branches:

Birmingham Cleveland New Orleans
Boston Detroit New York
Chicago Minneapolis Philadelphia
Pittsburgh St. Louis

THE MANHATTAN RUBBER MFG. DIVISION
of Raybestos-Manhattan, Inc.
Executive Offices and Factories
45 TOWNSEND ST., PASSAIC, N. J.



"Why do you use ARTIC for servicing Methyl Chloride units?"

"Because it is highly pure, readily available, and is used by many machine builders."

ARTIC has been a standard refrigerant since 1920. It is now used for charging all or some models of 35 different makes of household and commercial units. For service work it can be obtained from authorized stock points in the United States, Cuba, Mexico and the Hawaiian Islands. It conforms to rigid specifications on moisture, acidity, residue and boiling range.

Do As Machine Builders Do—Use ARTIC

Artic
IS A GOOD REFRIGERANT
The R. & H. Chemicals Dept.
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

REFRIGERATION NEWS

Registered U. S. Patent Office

ESTABLISHED 1926. MEMBER AUDIT BUREAU OF CIRCULATIONS. MEMBER ASSOCIATED BUSINESS PAPERS. MEMBER PERIODICAL PUBLISHERS INSTITUTE

VOL. 15, No. 3, SERIAL NO. 321
ISSUED EVERY WEEKEntered as second-class
matter Aug. 1, 1927

DETROIT, MICHIGAN, MAY 15, 1935

Copyright, 1935, by
Business News Pub. Co.THREE DOLLARS PER YEAR
TEN CENTS PER COPYCrosley Boosts
Daily Output to
More than 2,0002,624 Refrigerators Are
Made in One Day;
Payrolls Increase

CINCINNATI—Production of Crosley electric refrigerators has been increased beyond the daily capacity of 2,000 units provided for 1935 schedules and has run as high as 2,624 in a single day, Lewis M. Crosley, vice president and general manager of Crosley Radio Corp., declared last week.

Crosley refrigerator sales in April were 68.4 per cent ahead of sales in April, 1934. New all-time records in production, sales, number of employees, and size of payrolls were established in April, according to Vice President Crosley.

"The number of our employees has been increased from 4,359, and our payrolls are running in excess of \$90,000 a week," stated Mr. Crosley.

Fairbanks-Morse Is
Selling Conditioner

CHICAGO—Fairbanks, Morse & Co. is now manufacturing and marketing a complete line of year-round air-conditioning equipment under the trade name "Ortho-Climate."

F-M air-conditioning operations are not being directed by Fairbanks-Morse Home Appliances, Inc., which handles the electric refrigerators and other appliances which Fairbanks-Morse has introduced, but are a part of the business of the parent company.

Ortho-Climate air conditioners are built in floor-type cabinet models, wall models, and ceiling models.

Cooling and dehumidification may be accomplished either with circulating cold water or with a direct-expansion refrigerant.

In the floor-type conditioner, the air from the room enters through the rear of the cabinet, is picked up by the motor-driven blower, and directed at the rate of 350 c.f.m. down and then up over the cooling coils. Air discharge is from the top of the cabinet. Moisture condensed on the finned coils falls to the drip pan from whence it is carried away by the drain line.

Cleaning of the air is claimed to be accomplished by "air washing," the air passing over wet coils in the summer, and in the winter through the dehumidification spray.

For heating in the winter, the Ortho-Climate cabinet conditioner can be used either with steam or hot water heating systems.

The radiator of the Ortho-Climate unit is equivalent to 105 sq. ft. of radiation on 2-lb. steam.

On hot water, where forced circulation of the water is provided, it has the same radiation equivalent as on a 2-lb. steam system. However, where forced circulation is not provided, the capacity on hot water is only about 63 sq. ft. or 60 per cent of what it is on steam.

For humidification, a separate water line is run to the unit and in this water line is a mist-head or spray which breaks up the water in fine particles and sprays it on the fins of the heated radiator.

The heated air is forced through this vaporized mist and in passing through it absorbs moisture.

Relative humidity control can be

Stewart-Warner Price
Reduced in Detroit

DETROIT—Well & Co., with five stores in Detroit, is offering 6-cu. ft. lacquer-finished Stewart-Warner electric refrigerators for \$139.50—no money down and two years to pay. This model formerly listed at \$169.50, according to ELECTRIC REFRIGERATION NEWS's official tabulation of specifications, although Well & Co. is advertising that it was "originally \$185."

This price drop is purely a local dealer proposition, declares John Ditzell, Stewart-Warner refrigeration sales manager.

"Stewart-Warner has not cut prices at the factory by a single penny," states Mr. Ditzell. "Certain dealers may have got together and decided voluntarily to reduce their discounts."

2,309 Units Sold in
Birmingham in
Four Months

BIRMINGHAM, Ala.—Birmingham electric refrigerator dealers, taking stock of their efforts for the first four months of the year, find that they sold 132 per cent more refrigerators than for the same period last year.

January sales numbered 106, February 315, March 780, and April 1,108. Sales for April were 308 per cent ahead of the same month last year.

"We expected to sell twice as many refrigerators this season, but sales so far have run far beyond our expectations," said Ira J. Randall, manager of the Alabama Electric Refrigeration Bureau. "This record can only mean one thing—more money in circulation. Most families, now without one, want a refrigerator; and it is chiefly a question of ability to pay."

Nema's Meeting to
Open on May 19

HOT SPRINGS, Va.—The spring meeting of National Electrical Manufacturers Association (Nema) will be held at the Homestead here May 19 to 23, inclusive, it has been announced by W. J. Donald, managing director.

Three general meetings will be held, as follows:

Monday morning session, May 20; Tuesday evening session, May 21; and Wednesday morning session, May 22.

The first association meeting will be closed, only members of the organization being admitted. The Tuesday general session will feature addresses by speakers of national prominence on proposed legislation and economic conditions in the light of present-day problems of the industry, and will be open to all members and guests.

Wednesday's meeting will also be closed, and only members may attend.

The entertainment program is featured by a golf tournament.

Kelsey Added to Staff
Of Stewart-Warner

CHICAGO—L. L. Kelsey has joined the sales staff of Stewart-Warner Corp., manufacturer of Stewart-Warner refrigerators and radios. Mr. Kelsey for the present will do special sales work under John F. Ditzell, sales manager on these products.

For the past two years, Mr. Kelsey has been with Zenith Radio Co., introducing Zenith products to the automotive field.

Chief Inspector



WILLIAM A. DEVLIN

Devlin Head Inspector
At Universal Cooler

DETROIT—Appointment of William A. Devlin as chief inspector of Universal Cooler Corp. has been announced by Frank S. McNeal, president and general manager of the company.

Mr. Devlin, who has already assumed his new duties, is one of the better known figures in the refrigeration industry, and comes to Universal Cooler from Kelvinator Corp., where he was chief inspector at the Plymouth Road factory since 1928.

He had previously enjoyed wide experience in the industry, having joined Frigidaire Corp. in 1920, where he served in the engineering and service divisions, resigning in 1922 to become associated with the Nizer Corp. in charge of production and all testing. He left that organization to join Kelvinator Corp.

NRA Official to Speak
To Refrigeration Bodies

HOT SPRINGS, Va.—Prentiss Cooney, code administrative officer of the National Recovery Administration, will be guest speaker at a joint luncheon meeting of members of the National Electrical Manufacturers Association, the Refrigerating Machinery Association, and the Air Conditioning Manufacturers Association, to be held May 23 at The Homestead here.

All Manufacturers Sell 459,800
Household Units in 1st 3 MonthsNew Starr 6 Cu. Ft.
Box Sells for \$139

RICHMOND, Ind. — Retailing for \$139.00, the new 1935 model N Starr Freeze domestic refrigerator, manufactured by the Starr Co. here, has a net capacity of 6.1 cu. ft. and a shelf area of 13 sq. ft.

Features incorporated in the food compartment of this model are rounded corners, raised front legs, walnut trim around door opening, electric light, mesh type double hot tinned shelves, rubber covered shelf hooks, and four 28-cube ice trays.

The model is equipped with a Starr Freeze J3-MA condensing unit with a capacity of 151 lbs. I.M.E. per 24 hours. The unit has a twin-cylinder compressor and a 1/4-hp. capacitor-start, induction-run motor. Other specifications include an expansion type cooling unit with methyl chloride refrigerant and multi-point temperature control with defrosting switch and overload indicator.

The refrigerator may be obtained in enamel or vitreous porcelain. It has a one-piece top, and is insulated with Zilem sealed slabs, three inches thick.

San Diego Campaign
Stresses FHA Plan

SAN DIEGO, Calif.—The Better Housing plan of purchasing a refrigerator, under Title 1 of the Housing Act, is being stressed in an advertising campaign put in effect this month by the Bureau of Radio & Electrical Appliances of San Diego County, states J. Clark Chamberlain, secretary-manager of the organization.

In order to advertise "no down payment" and "\$3.20 per month," a special arrangement has been made with some of the banks. The \$3.20 figure applies to refrigerators selling at \$100. Larger amounts would be in proportion.

The San Diego Trust & Savings Bank and the Security Trust & Savings Bank will both take low payments or long terms if necessary. The United States National Bank prefers a maximum term of two years. The Bank of America will accept refrigerator loans, but its monthly payment requirements are higher than the others. First National Bank will handle housing act refrigerator business. (Concluded on Page 2, Column 4)

By A. J. Cutting
DETROIT—Continued record-breaking performance characterized refrigeration industry sales during March when manufacturers sold an estimated 228,100 household electric refrigerators to distributors and dealers throughout the world to show a gain of 53 per cent over the same month of 1934.

Refrigerator sales during the first quarter of the current year reached a total of 459,800—the highest point in industry history—being better than 70 per cent ahead of the first three months of 1934, the previous record year, when 269,500 units were sold.

That nearly a half million refrigerators have been shipped to distribution outlets during the first quarter is a remarkable achievement in view of the fact that shipments during the early months are usually comparatively low. The peak month has never been reached until April, and if second quarter sales during 1935 follow the same upward trend, the industry should be well on the way toward the two million mark.

The table below compares industry sales by months for the first quarter of 1934 and 1935:

	1934	1935	Per Cent Increase
January	38,000	103,400	172
February	82,500	128,400	56
March	149,000	228,000	53
First Quarter	269,500	459,800	71

Members of the Refrigeration Division of the National Electrical Manufacturers Association (Nema) sold 207,531 household electric refrigerators during March, bringing the first quarter total to 418,419 as compared with 244,991 during the first three months of 1934. The following 14 companies reported sales during March: Apex, Crosley, Frigidaire, General Electric, Gibson, Kelvinator, Leonard, Norge, Servel, Stewart-Warner, Sunbeam, Uniflow, Universal Cooler, and Westinghouse. Nema members who have not reported to date during 1935 are Jomoco, Merchant & Evans, and Sparks-Withington. The Nema three months' total includes refrigeration units manufactured by members for Fairbanks-Morse, Major, Montgomery Ward, Potter, Sears, Roebuck, and Truscon Steel.

The detailed report of March sales by Nema companies will be found on page 14 of this issue. Also shown are inventories of stocks held by factory, branch, and warehouse, and by distributors during January and February.

York Has New Freon
Units & Conditioners

YORK, Pa.—Rounding out its 1935 line of commercial refrigeration and medium-sized air-conditioning equipment, York Ice Machinery Corp. has just introduced 15, 20, and 30-ton horizontal type air conditioners and added four new Freon self-contained condensing units ranging in size up to 25 hp., reports S. E. Lauer, general sales manager.

Already in production, the new condensing units are of the "balanceal" design which has been sold in sizes up to 7 1/2 hp. by York dealers and distributors for the past two years. They are intended for commercial refrigeration requirements, and for the same general range of air conditioning as the three new air conditioners, Mr. Lauer states.

The York company manufactures a complete line of heavy duty Freon compressors in capacities up to hundreds of tons of refrigeration of course, and also the air-conditioning equipment in these larger sizes.

The 10-hp. unit, model 44T6FW, is a three-cylinder single compressor. The other new models are duplex units, with a motor mounted at the center of the base and belted to identical compressors at each end.

Thus the new 15-hp. unit, model 446FW, is a duplex machine comprised of two two-cylinder compressors, and the 20 and 25-hp. units, models 44T6FW and 44T8FW, have twin three-cylinder compressors.

Designed especially for use with Freon refrigerant, the new 10, 15, 20, and 25-hp. condensing units embody all the features of York's balanceal line of machines—Pressureflex suction and discharge valves, Centriforce (Concluded on Page 20, Column 3)

Scene of Coming 'Refrigeration Fiesta'



The new addition to the home of ELECTRIC REFRIGERATION NEWS will be opened for inspection on Wednesday evening, May 22, when the American Society of Refrigerating Engineers meets in Detroit. A full evening's entertainment will be provided by the News for the visiting engineers and their wives. A large number of Detroiters, prominently connected with the refrigeration and air-conditioning

industries, will assist in welcoming the out-of-town guests.

The new building will add 7,500 square feet of floor space to the offices and plant of the News.

Editorial and advertising departments will be located in the old gray-stone residential building while subscription, accounting, production, and mailing departments will occupy the new brick addition in the rear.

Both old and new buildings will be completely equipped for all year 'round air conditioning.

The home of the News is located on Cass Ave., one of the main thoroughfares of Detroit, directly opposite the Public Library and Art Institute plaza. Visitors usually comment on the attractive outlook and setting. In the picture above, note the magnolia tree just coming into full bloom.

Government Begins Four Billion Dollar Rural Power Plan

WASHINGTON, D. C.—A new field of Federal activity in the power business, so broad as to appear almost unlimited at first glance, was opened by the creation by President Roosevelt last week of the Rural Electrification Administration under the terms of the \$4,000,000,000 work-relief program.

Only one immediate check on this development—the lack of funds—was noted by observers in the Capital.

According to the President's executive order, the new electrification administration was directed "to initiate, formulate, administer, and supervise a program of approved projects with respect to the generation, transmission, and distribution of electric energy in rural areas."

Under one interpretation of the President's power executive order, the new unit, REA, was believed able to build or acquire lines to power plants of the Tennessee Valley Authority, thus short-circuiting a Federal Court injunction against sales of TVA power.

Supplementing and bolstering the sweeping grant was authority in the order for REA "to acquire, by purchase or by the power of eminent domain, any real property or any interest therein," in addition to selling or leasing property.

Whether this language foretold the actual purchase or condemnation of existing power plants, transmission lines, and distribution systems could not be learned. Morris L. Cooke, already acting as head of REA though not formally appointed, was out of the city.

Officials said that most of the projects under the plan probably would result from organization of

mutual companies by farmers. They predicted that few, if any, generating plants would be built because of the huge cost. For amplification, they referred to a radio speech to be delivered by Cooke next Saturday.

REA already has been tentatively allotted \$50,000,000, half the sum suggested by Congress in the works law. Under the President's flexible powers to transfer funds, \$900,000,000 conceivably could be devoted to rural electrification.

Grunow Dealers Using Portable Demonstrator

CHICAGO—Heart of the home demonstration activity for distributors, dealers, and salesmen for General Household Utilities Co., manufacturer of Grunow electric refrigerators, is the new Carrene vacuum system ice making demonstrator.

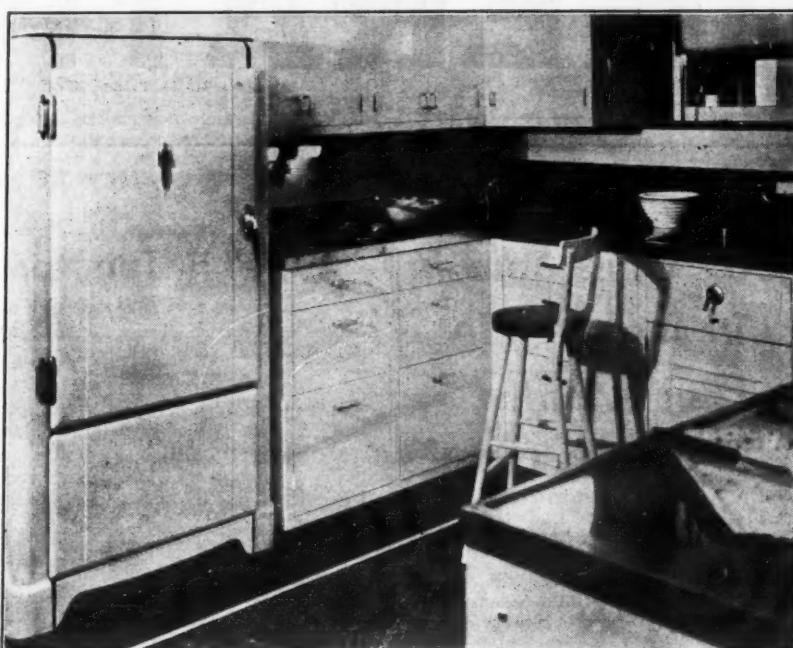
By means of the demonstrator, the salesman can point out the cycle of electric refrigeration to the prospect in such a way that he can see what goes on inside the pipes and coils.

The demonstrator is portable and may be used in the store or the home, and does not involve the expense of delivery and pickup in bringing the actual refrigerator to the prospect's home. The home demonstration also gives the salesman from a half hour to an hour's visit with the prospect.

Distributors and dealers have been supplied with home demonstration charts for this activity. The chart is to be mounted on beaverboard and hung in a conspicuous place in the dealer's office.

According to the sales plan, each salesman is to make out a red tag for each one of six prospects selected by him as the most likely to close first. Each tag is to be hung on a nail on the chart to show that the salesman will have at least one definite demonstration a day.

Increasing Refrigerator's Utility



The utility of the electric refrigerator in the new McCall's Magazine kitchen is increased by the provision of convenient working and storage space for all food and equipment, such as an electric mixer, bowls, cutlery.

Camp Joins Washington Crosley Distributor

BALTIMORE—C. Camp, formerly manager, Montgomery Electric Co., Inc., Baltimore subsidiary of Barber & Ross of Washington, former distributor for Kelvinator, has become associated with Lincoln Sales, Inc., Baltimore and Washington distributor for Crosley.

Federal Judge Enjoins Use of PWA Funds For Power Plant

GREENVILLE, S. C.—In a recent ruling, Judge H. H. Watkins in Federal District Court here barred the use of Public Works Administration funds to set up a power plant in Greenwood County, S. C.

An injunction prohibiting use of such funds in the Buzzards Roost electrical project on the Saluda River was granted to the Duke Power Co. against the county and Secretary Ickes as PWA administrator.

Judge Watkins held that since the primary purpose of the project was the development of power to be sold to private interests, it would be a proprietary and not a public enterprise. He ruled that the effect of the project would be to impair and destroy the business of the Duke Power Co.

Since the plan comprised the generation and sale of power locally, and not outside South Carolina, the judge held that the Constitution's clause in regard to interstate commerce did not apply.

He stated that Congress cannot legislate to provide for such a local enterprise under the "general welfare" clause of the Constitution.

The court upheld the contention of the power company's bill of complaint that the construction costs of the project would exceed the amount to be appropriated by approximately \$1,000,000.

The contract provides for a loan of \$2,852,000 for the construction work.

San Diego Campaign Stresses Financing By FHA Plan

(Concluded from Page 1, Column 4) ness, but prefers not to accept low payments or long terms.

Dealers are to have rate charts and application forms on hand. The banks usually require 24 hours to check applications. If satisfactory, the full purchase price of the refrigerator is available to the dealer in cash, with no liability whatever. Payments are made direct to the financial institution.

In accordance with the Housing Act provisions, a permanent connection must be made by a licensed electrician. In most cases this is done with a BX cable installation. The charge averages about \$3.50, and is to be paid by the customer. If desired, such installation costs may be included in the loan when the amount has been determined.

3 Centers Featured In McCall's Kitchen

NEW YORK CITY—A remodeled kitchen and a remodeled laundry, both designed by experts from *McCall's Magazine*, are on display at the Industrial Arts Exposition now being held in Rockefeller Center here.

Kitchen equipment in the kitchen is arranged in three working centers, each independent in itself, but related to the other two centers. Designed in U-shape, the kitchen has its food preparation or refrigerator center nearest the back door, so that incoming food may be stored immediately with the least amount of wasted steps.

Next comes the sink-dishwasher center where the second step in meal making occurs. Adjoining the sink center, is the range-serving center. Table-top cupboards are placed next to each of the three major pieces of equipment to provide plenty of working surface.

Around the refrigerator-preparation center are grouped the utensils, cutlery and dry food ingredients used for baking and the preparation of salads and desserts. In cupboards over the refrigerator are kept bottled goods, fruits and juices which go into the refrigerator before using.

Around the sink-dishwasher center are grouped china, glassware, brushes, cleaning equipment, paring knives, etc. Everything required in operating the range-serving center is grouped around that unit—pans, tea and coffee makers, small electric appliances, canned vegetables, bowls, platters, etc.

Storage cupboards are provided both above and below the working surfaces or counters. All basic equipment in both the kitchen and the laundry is white in color to allow a change in color scheme by varying wall paint and curtains.

The laundry adjoins the kitchen as editors believe the laundry should be located on the first floor where housewife or maid can be close to the kitchen, the front door bell and the telephone.

The following manufacturers cooperated with *McCall's Magazine* in presenting the kitchen and laundry:

The Kitchen

Cabinets, Art Metal Institute, Brooklyn; Monel sink and sink counter, International Nickel Co., New York City; dishwasher unit, Westinghouse Electric & Mfg. Co., Mansfield, Ohio; refrigerator, Kelvinator Corp., Kelvinator distributors, Brooklyn; range, General Electric Co., Nela Park, Cleveland; floor, and wainscoting, Congoleum-Nairn, Inc., Kearney, N. J.; kitchen equipment, Hammacher Schlemmer & Co., Inc., New York City; fan, General Electric Supply Co., New York City; china and glass, B. Altman & Co., New York City; counter lights, Novelty Lighting Corp., Cleveland; quick-drying enamel and paint, Pittsburgh Plate Glass Co., Brooklyn.

The Laundry

Sorting unit, built to order; washing machine, Thor washer manufactured by Hurley Machine Co., New York City; ironing machine, Easy Ironer, Erb Electric Supply Co., New York City; laundry trays, Standard Sanitary Mfg. Co., New York City; floor and wainscoting, Congoleum-Nairn, Inc., Kearney, N. J.; curtains, Blossom Mfg. Co., New York City; laundry equipment, Lewis & Conger, New York City; electric water heater, General Electric, Rex Cole, Inc., New York City.

Leland & MacKinnon Made Asst. G-E Auditors

NEW YORK CITY—H. W. Leland and H. A. MacKinnon were appointed assistant general auditors and F. B. Cliffe was again named chief statistician at the meeting of the board of directors of the General Electric Co. held here recently.

Westinghouse Dealer Sells 21 Units in First Day

WOOD RIVER, Ill.—Franke, Inc., retail store recently opened by Joe Franke of this city, sold 21 Westinghouse electric refrigerators on the day of its opening.

COPELAND Profits Stay in Your Pocket

Because COPELAND is built to SERVE. Not to be SERVICED!

YOU don't have to keep your fingers crossed when closing an easy sale on a Copeland. You can sell Copeland with complete confidence. You will make a generous profit—you will sell your customer a reliable product that will render many years of efficient, economical service—and you will not lose your profit on endless service expense.

Copeland standards of engineering, design and manufacturing keep faith with both dealer and customer.

If you are struggling with a flashy line built to tease the "bargain trade", and running yourself ragged with service kick-backs, take the time to thoroughly look into this compact Copeland line of fast movers that sell easily—and stay sold! Dealers keep the quick profits they make with Copeland. Write, or wire, for full information.



BIG LINE OF COMMERCIAL MODELS

Copeland manufactures 24 different models covering every commercial application. Now used by many of the largest restaurants, dairies, soda fountains, retail stores, refrigerated trucks, etc. A big line, covering a big field which is now tremendously active and profitable. A few distributors franchises available. Write us at once!

COPELAND REFRIGERATION CORP.

Manufacturers of a Complete line of Household and Commercial Refrigeration

Holden Ave. at Lincoln
DETROIT, MICH.

Copeland

DEPENDABLE Electric REFRIGERATION



KRAMER IceCube Makers

Cash in on the popular demand from hotels, restaurants, etc. for ICE CUBES. This unit can be easily sold as an "extra" in figuring jobs for refreshment centers. 280 to 384 cubes per freezing—4 to 8 freezes daily. Write for prices.

UNIT COOLERS — EVAPORATORS — CONDENSERS — COOLING COILS

TRENTON AUTO RADIATOR WORKS
210 West 65th, N.Y.C. TRENTON, N.J. 5114 Liberty Ave., Pittsburgh, Pa.

First!



The race for business in the electric refrigeration field

is one race in which the *favorite* is bound to win. And

Frigidaire ranks number one in public preference.

Dealers who appreciate this fact are those who also

appreciate the value of

the Frigidaire franchise.

Frigidaire '35

THE GENERAL MOTORS REFRIGERATOR

Dealers' Experiences Suggest Answer to Sales Problem

Editor's Note: For obvious reasons, the name and address of author of the accompanying letter were deleted before publication. The editors believe, however, that his frank questions about his retail selling setup will be of interest to readers, even though his name must remain anonymous.

The answer which is published is a resume of the experiences and methods of dealers in all parts of the country, gleaned from stories about "how" they conduct their business published in Electric Refrigeration News.

Editor:

The writer has just become actively interested in retail specialty selling. Our plan does not seem to get the best results from the salesmen. I wonder if you won't give me the benefit of your opinion, or refer me to past issues of ELECTRIC REFRIGERATION NEWS and a source of comparative experience.

We have 10 salesmen, selling at retail pianos, electric refrigerators, radios, washing machines, ironers, and vacuum cleaners, within a radius of about 50 miles from our city, which has a population of about 50,000. Within a radius of 20 miles from town the territory is unrestricted as to salesmen. Outside of that distance a salesman is given a restricted territory.

All of our salesmen are on commission and drawing account of \$25 per week. Most of them are overdrawn considerably, with the resulting psychological handicap and possible financial loss.

Pianos pay 20 per cent commission, refrigerators 12½, and radios and appliances 10 per cent.

Each salesman is allowed to reserve 50 prospects in the prospect file, without any time limit as to how long they remain in his file.

Salesmen get merchandise delivered for demonstration by obtaining the approval of the credit department. There is practically no restriction as to how long merchandise is left on demonstration.

Each salesman reports his sales and turns in the down payments and sales contracts on Monday morning at the weekly sales meeting, at which time he is given a drawing account check, with small regard to his efforts or sales for the preceding week.

During the week, each salesman works independently, without supervision except some help in selling from the head salesman. They spend

considerable time waiting in the sales room for drop-ins, which are few, because the high commission precludes much advertising. Sales made on the sales floor pay the same commission as those made outside to prospects obtained through the salesman's efforts.

It seems to me we need a sales manager to direct the salesmen individually and to coordinate their efforts, seeing that they plan their work and follow up each prospect for all it is worth.

While the defects of our plan may seem to you too obvious to mention, I have not been able to convince the man in charge of sales of them. If you would take the trouble to criticize our method in a letter, I believe that would be of some assistance. Perhaps this request is out of the ordinary. At any rate I want to thank you in advance for any attention you may give it, and to assure you of my appreciation of your magazine.

Answer: For some years we have been attempting to gather information from successful distributors, dealers, and salesmen on just how they went about the business of selling electric refrigerators and other appliances. Answering your letter, then, resolved itself into a task of studying a number of these "how" stories until we found information which might be useful to you in your dilemma.

Here, then, are a few examples of how other dealers have solved similar problems. These examples, we feel, are particularly applicable to your own case:

Salesmen & Territories

1. **Salesmen and Sales Territory.** You have 10 salesmen, working in a territory which comprises, in addition to your city, the whole of the county. The 1930 census figures show your market to be over 75,000 people and the 1935 REFRIGERATION MARKET DATA BOOK lists wired homes in your city a little less than 15,000. It would seem reasonable that your sales force is not too large, especially when the number and variety of the appliances you handle is considered.

Your policy of part restricted and part unrestricted territory is an unusual combination of dealers' practices. One eastern dealer is a firm believer in the "no closed territory" policy for salesmen. He finds that this policy increases competition among members of his sales force, and keeps salesmen from "hoarding" prospects and underworking their territory.

Other dealers are just as strong in their praise of the closely restricted territory policy. Their argument is that, when territory is unrestricted,

most salesmen will flock to the best districts, which will consequently be overworked, while the other districts are left almost untouched. Rival dealers' men, finding this almost-virgin territory, can work it almost without competition; and many sales which might have been made on a comparative basis go to the other dealer without a struggle.

While it is still pretty much of a moot question, most dealers seem to feel that, when a sales force is made up of seasoned men, who know the ins and outs of specialty selling and can be permitted to work with a minimum of supervision the open sales territory policy will produce satisfactory results.

Otherwise, the closed territory policy is preferable, since it permits a closer check on the efforts of the individual salesman, allows a dealer to compare the work of two men under similar circumstances, and gives him an accurate idea of which sections of his territory require the most attention.

In other words, restrict territories when your salesmen are new; open up when they become more responsible.

Salesmen's Compensation

2. **Compensating Salesmen.** Your men are on a commission and drawing account of \$25 per week, and are badly overdrawn. Another dealer, whose salesmen are working on a plan similar to yours, will allow them to fall behind in their drawing accounts for a month or two; but if at the end of that time they have not shown signs of balancing drawing accounts and commissions, they are released.

If salesmen understand they are working under such an agreement, those among them who are competent and serious about their work will usually manage to strike a balance; the others are just so much dead timber.

The principal advantage of the drawing account, of course, is to furnish the salesman with money to live on during slack times. Some companies have advanced money to salesmen, chargeable against commissions, without realizing that such debts do not hold legally unless secured by contract.

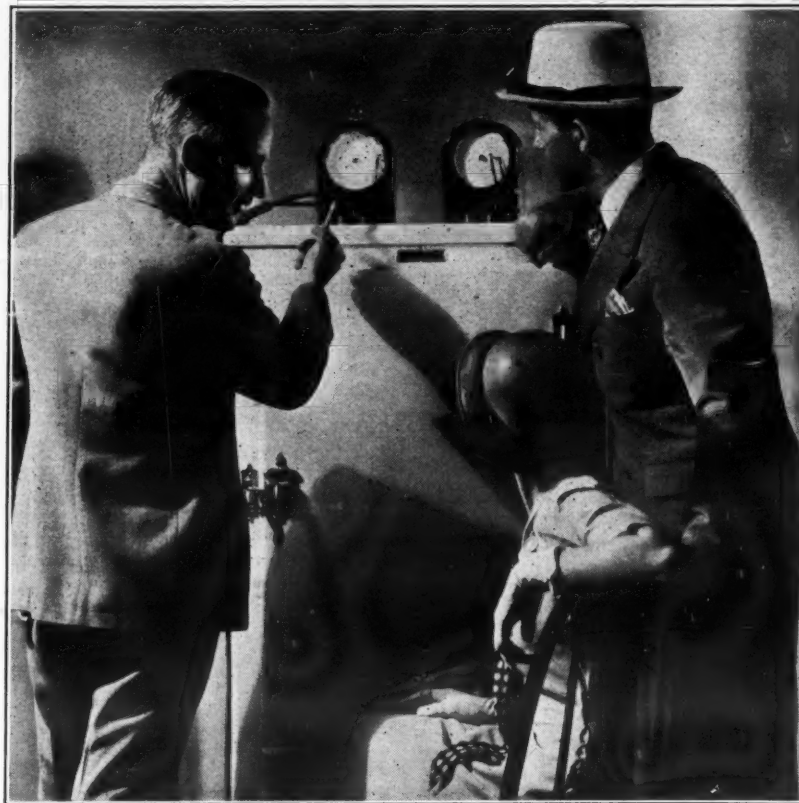
Most dealers, in practice, don't put salesmen on drawing accounts until they have demonstrated their ability to earn more than the drawing account calls for.

In most commission-and-drawing-account setups, therefore, it would seem advisable for the dealer to enter into an agreement with the salesman as to the latter's liability for any money he might owe the firm when he severs his connection with it.

This action was advised by the Los Angeles (Calif.) Chamber of Commerce, in a survey on salesmen's compensation made last year.

To be sure that salesmen will produce, many dealers establish a definite dollar volume sales quota which members of their sales force are required to meet in order to keep their jobs.

For Prospect Demonstrations



This salesman is using a practical motor operation recorder (on the left) and a practical recording thermometer to demonstrate refrigeration performance to prospects. One thermometer is placed on top of the box to record room temperature, while another is placed inside to record the refrigerator temperature simultaneously. Instruments shown here are made by the Practical Instrument Co.

Rate of Commission

3. **Rate of Commission.** Your salesmen, you say, are paid a commission of 12½ per cent on electric refrigerators. This is in line with commission policies of other dealers, who may vary the rate of commission from 10 to 15 per cent. With good sales volume, such an arrangement should prove profitable to both you and your salesmen.

In a plan inaugurated this year by the Birmingham, Ala., Refrigeration Bureau, dealers have the option of paying full-time salesmen either a 10 per cent basic commission, plus 2 per cent for making monthly quota, plus 1 per cent for making yearly quota or else a straight 12 per cent commission to salesmen who have demonstrated their earning ability.

On an estimated annual quota of \$12,000 retail price, the salesman would earn under the compensation plan suggested a total of \$1,560 per year, provided he earned all monthly and yearly bonuses.

One dealer in Columbus, Ohio, has a rather unique arrangement which might interest you. He pays his salesmen a commission of 10 per cent of the delivered price of the refrigerator sold. Every month in spring and summer, the salesmen receive all of their commissions up to a total of \$100, and one-half of the remainder of their commission money, if it's over that amount.

The other half of the salesman's over-one-hundred-dollars earnings is placed in reserve by the company, and credited to the individual salesman, until \$300 is accumulated for each man, after which the full amount of commission earnings are paid out, regardless of their amount.

During the winter months, when sales usually slump, this \$300 reserve fund is parceled out at the rate of \$66 per month, in addition to the regular commissions earned, to help the salesmen maintain a steady income throughout the year. In the spring, when sales are up, the reserve fund is again built up for the coming winter.

Supervision

4. **Supervising Salesmen.** Knowing salesmen, their character and habits, is of prime importance in enabling the dealer to get the most out of each one in the way of sales.

Many dealers have found their best results in setting high, but attainable, sales quotas for each man, and paying a bonus of, say, 1 or 1½ per cent, monthly or annually, for salesmen who beat the mark set for them.

Other successful dealers establish what they consider fair quotas for each of the articles which they sell, and pay a commission for each article sold—with an additional bonus of 1 or 1½ per cent to the salesmen who do a rounded satisfactory work on more than one appliance selling job over a year's time.

The salesman receives a fair commission, regardless of what he sells, but his bonus depends on his selling during the course of a year a specified number of each appliance the dealer handles.

One dealer has gone so far as to say that the character and habits of his sales force are responsible for fully 90 per cent of his sales.

Knowing the capabilities of your salesmen, however, is one thing—seeing that they produce satisfactory results is quite another.

Your letter would indicate that your salesmen don't exactly suffer from an abundance of supervision. You allow them to spend, you say, considerable time on the sales floor waiting for drop-ins, which you admit are few—and your men rarely gather, it seems, except at the weekly Monday meeting to turn in sales and orders and receive their checks.

Let's see how a successful dealer in Washington, D. C., handles this phase of his business:

A seasoned salesman, with a record as a sale-closer, is kept on his sales floor at all times for inside sales. He is paid a straight salary, regardless of sales. The men who work outside the store are not permitted to come into the showroom, unless accompanied by a prospect.

These outside men, who are on a commission basis, receive their full share on sales closed by the inside salesman, provided the prospect was theirs originally.

Two sales supervisors, also on straight salaries, devote their full time to seeing that salesmen in the field are doing their best work. The dealer pays them salaries deliberately, so that they will not shirk their men in an attempt to build up their own earnings.

Sales meetings are held daily, with attendance required. This practice of daily sales meetings, preferably in the morning before the men start out on their jobs, has been found most effective in helping the men get the most out of their territories.

Where more than one appliance is sold (as in your own case), it has been found most profitable to devote all of one meeting to a single appliance, to the exclusion of everything else. This gives salesmen a chance to concentrate on their problems in selling one appliance, and to exchange ideas and problems.

Often it has been found helpful to have star salesmen explain how they closed certain sales, or to give a series of model sales presentations, with the rest of the salesmen being called on for suggestions and comments.

The daily meeting seems to be the one thing upon which most dealers of any size agree as a major help to successful sales supervision. In this case, it may not be possible to have your men from the outlying districts come in every day—but it would appear advisable for at least those working the first 20-mile radius out of Springfield.

Daily reports on salesmen's activity (Concluded on Page 5, Column 1)

VIRGINIA SMELTING Company
WEST NORFOLK, VIRGINIA
76 BEAVER ST. N.Y. - 131 STATE ST. BOSTON

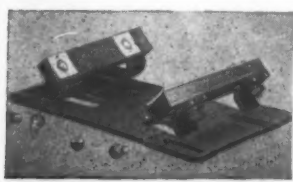
Extra Dry
ESOTOO
LIQUID SULPHUR DIOXIDE
V-METH-L
METHYL CHLORIDE

Wagner Motors are Quiet

IN the beginning the sole concern of the electric refrigeration industry was one of producing automatic operation with little regard to refinements in mechanical performance. Later the question of quiet operation became not only a competitive point, but an essential factor of satisfactory performance of refrigerators.

Wagner motors are the product of 44 years of experience in motor building and some fifteen years of close co-operation with manufacturers of domestic and industrial refrigerators. Their wide preference and adoption by the electric refrigeration industry attests to their exceptional fitness for refrigerators.

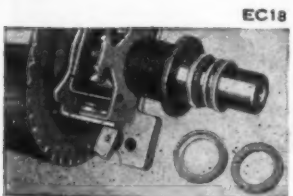
Among the distinctive features contributing to the quietness of Wagner motors is the rubber mounting, made up of layers of rubber and steel vulcanized together—elastic enough to absorb the small amount of vibration remaining even in the most carefully-designed motor, yet firm enough to preserve correct shaft alignment. Photo E572 to the left illustrates this type of mounting, a mounting that does not interfere with the removal of the motor or its endplates.



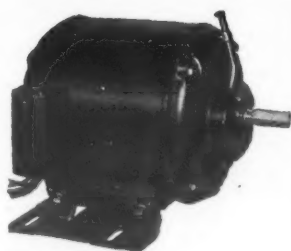
E572

Another feature is the cork thrust-washer (see Photo EC18 to the left) which eliminates end-play noise. In addition, rotors are skewed to reduce magnetic noise, and dynamically balanced to eliminate vibration and governor weights are silenced with felt bumpers.

Quiet operation is but one of several motor qualities the refrigerator manufacturer must consider. There are also such considerations as dependability, interchangeability, appearance, and performance—all of which are fully provided for in Wagner design and construction. For a full description of Wagner motors, ask for Bulletin 167.



EC18



There's a Wagner motor to fit your needs, regardless of the type you prefer. Included in the Wagner line of motors are:

- Type RB Split Phase
- Type KA Repulsion-Start-Induction
- Type RBZ Capacitor-Start Induction-Run
- Type RZH Capacitor-Start Capacitor-Run
- Type RD Direct-Current
- Type RP Polyphase Squirrel-Cage

Wagner Motors are available in such various mechanical variations as open, totally-enclosed, or drip-proof; rigid or resilient mounted; horizontal, vertical, or flange-mounted; sleeve or ball bearing, etc.



Wagner Electric Corporation

6400 Plymouth Ave.

Saint Louis, U. S. A.

MOTORS TRANSFORMERS FANS BRAKES

5635-2C

Chrysler Engineers Busy on Technical Details of New Airtemp Air Conditioners



Allen C. Staley, Chrysler's chief air-conditioning engineer, caught by the candid camera as he busily plans developments that will bring Airtemp still further up among leaders in the industry. (1) He checks some new unit cooler experimental plans with an assistant. (2) "That half-ton self-contained room cooler we brought out last winter is our 'pet'—but the whole line is top-notch." (3) "Here—I'll show you something we're working on right now." (4) A. H. Knight, head of Chrysler's advisory committee, onetime University of Michigan professor, and father of Betty Knight, secretary to the managing editor. (5) J. R. McCallum of the Chrysler engineering laboratory staff, reads the meters on a performance test.

'How' Stories Furnish Data on Ways Of Compensating Salesmen

(Concluded from Page 4, Column 5)

ties, most dealers find, are important. Your letter said nothing concerning this, so we are assuming you do not require your men to turn in such reports.

With a daily report to consult for each man, it is but a short task for the dealer or his sales manager to discover—and discover in time—the salesmen on his force who are doing the best job, and whose methods might well serve as an example to those others whose work is not up to par.

Another successful dealer, instead of requiring daily reports, has his salesmen report to him nightly by dictaphone. He reasons that in this way salesmen will tell him of their problems naturally, since most salesmen are better talkers than writers.

Then, too, it lightens the salesman's "paper work" burden. The dictaphone reports are mailed by the salesman to the dealer, who has a secretary transcribe them, sending a duplicate to the salesman for his records.

Sales contests are always good means of keeping salesmen on their toes and after new business. Especially in smaller organizations, periodic contests, with either cash, clothing, or household articles as prizes, do a great deal to keep a dealer's sales force at top efficiency. The important thing is to keep the salesmen vying with one another for top ranking in the organization.

Prospects

5. *Prospects—Getting and Keeping Them.* Most dealers will agree that, in a city of considerable size, too many "call-backs" are a hindrance to sales, rather than a help. In a smaller city, where acquaintance is more general, this is not a major problem. "A prospect is never dead until somebody else sells him," insist some small-town dealers. But not so in the metropolitan centers.

One dealer in a large city will permit salesmen to make only three calls on a prospect. If the sale isn't closed by this time, the salesman must show good reason for his failure to make a sale, or the prospect's name is given to another salesman for follow-up.

Names are usually kept in the "prospect" file for 30 days, after which, if no sale has been made, they are classed as "dead," and removed.

The number of prospects which each salesman is permitted to keep is, in most cases, up to the individual dealer. Most of the better ones, however, will not permit a salesman to "hoard" prospects more than 30 days.

If definite progress toward a sale has not been made in this time, most dealers figure the salesman is not apt to make much more progress.

Often a prospect, lukewarm to one salesman's approach, is sold readily when contacted by a different person.

"If a tall guy can't close the sale, send a short, fat one," advises one dealer. "If a blonde doesn't get it, try a brunette." Giving prospects some variety in the sales presentation may result in the saving of several sales which otherwise might be lost to competition.

In finding prospects, most dealers still rely on the "cold canvass" method. On their daily reports, salesmen are required to list the names of the canvass calls they have made. One dealer requires his men to make 50 such calls daily.

While this may seem excessive to you, it indicates how highly some dealers value this method of getting prospects. Building permits, wedding license records, etc., are other favorite sources of prospects used by top salesmen. It may be you have a favorite one of your own.

"Using the user" is another time-proven favorite. "See at least three users a day" is the order some dealers give their salesmen. Others set a weekly quota of user calls, usually not less than 15.

Satisfied users are the best possible boosters of any product, and most of them are more than willing to furnish the names of their friends who have expressed interest in the refrigerator or other electrical appliance, and said they'd like to have one like it.

An excellent plan, one widely practiced, is to offer users a cash premium of \$2 to \$5 for each prospect they turn in who later buys a refrigerator. "Booster Clubs," in which users vie with each other for prizes to the one furnishing the most good prospects, are a regular part of many dealers' sales programs. Some dealers prefer merchandise awards to cash—but the principle is the same.

Demonstrations

6. *Demonstrations.* This is a problem over which there is still considerable controversy. Some dealers have gone on record against home demonstrations or "consignment selling" of any sort, preferring to have the demonstration made on their own sales floor.

This is especially true where the dealer has on his staff a home economist, whose work it is to demonstrate what the refrigerator can do, and how it should fit into the kitchen scheme.

Other dealers, without extensive store demonstration facilities, lean toward the home demonstration idea, and employ it to good advantage. Some of the larger manufacturers have demonstration kits which help the prospect visualize the refrigerator and how it is made.

Many dealers, however, feel that if a prospect is sufficiently interested in a refrigerator to allow it to come into her home for a demonstration, the sale can be closed without that formality. The so-called "trial period" to some people simply means a few days free refrigeration, at the end of which time they will allow the dealer to call for the refrigerator, since they at no time had any intention of buying.

When home demonstrations are permitted, most dealers set the time limit at three days or a week, seldom longer. If the prospect is sincere, he will have ample time in three days or a week to judge whether the refrigerator on demonstration is the one he wants to buy.

This information may be sketchy and a bit disjointed, but the role of sales consultant is a novel one to us—reporting suits us much better. Copies of *ELECTRIC REFRIGERATION NEWS* are a prolific source of information on how other dealers in this rapidly-growing business are meeting and solving the many problems they come up against. Scarcely a week passes without the *NEWS* chronicling information on the "how" of selling electric refrigerators, and close reading of each issue should give you many helpful tips.

Texas Dealer Closes 14 Sales in 1 Day

FORT WORTH, Tex.—Sale of 14 Crosley electric refrigerators on a single Saturday by Cal Farley, Crosley dealer at Amarillo, Texas, is reported by C. B. Savage of Shield Co., Inc., Crosley distributor at Fort Worth.

An interesting sidelight reminiscent of the early Southwest, is given to the story by Mr. Savage's story of the sale:

"In the sale of three of the 14 Shelvadors, three families had journeyed into Amarillo from their homes five miles north of Tascosa, located in Oldham county. Tascosa was the capital of this part of the country in the Buffalo and early cattle days, and

was a town of considerable repute in gambling, shooting, and other roughness incident to early settlements.

"These three families live on what is known as Boot Hill. It was the cemetery for Tascosa in the old days and derived its name from the fact that the dead men shot in Tascosa were buried with their boots on in that cemetery.

"The three families stated that they had shopped around and had come to the conclusion the Shelvador was what they wanted.

"A slight argument arose between them as to when they were going to make their purchases. They decided to settle the issue by tossing a coin.

"So a nickel was tossed with 'heads up' for the immediate purchase. And 'heads up' it was and the sale was made immediately."

2 Men Complete Crosley Service Course

CINCINNATI — G. L. Williams, Crosley dealer at Carbondale, Ohio, and Roy Martin, service man for General Stores, Concho, W. Va., have just completed a week's training in service at the Crosley factory here.

Shapiro Named Dealer For 1900 Washers

NEWBURGH, N. Y.—Shapiro Sporting Goods Co. of this city was recently named distributor for 1900 washers and ironers by the 1900 Washer Corp. Shapiro company is also distributor of Grunow refrigerators and radios.

LEONARD ADVERTISING STARTED TO WORK FOR YOU IN 1890!

Refrigerators



Don't buy until you have examined the **LEONARD CLEANABLE.** Others may claim to be as good, but they are not. They all lack the great improvements found only in the **LEONARD.** Movable Flues, Air-tight Locks, Five Walls, Cold Dry Air, Hardwood, Antique Finish. Elegant and Durable. Send your address and receive our Art Catalogue free, and your nearest agent's name.

From the Ladies' Home Journal, April 1890

Keeping Pace

OUR engineering staff is continually alert to improve the line of **ACE HARD RUBBER DOORS, RAILS, JAMBS** and other parts for Display Refrigeration Equipment. Manufacturers look to us for standard products and dependable service. They get it.

A complete catalogue will be mailed to manufacturer who wishes to consider Ace products and Ace service.

AMERICAN HARD RUBBER CO.
11 MERCER STREET, NEW YORK, N. Y.
Akron, O. • 111 W. Washington St., Chicago

Cash in on this GREAT NAME

BACKED UP WITH—Nation-wide magazine advertising. • Hard-hitting, key city newspaper campaigns. • Prospect-pulling Talking Pictures for dealer promotion. • Dramatic movie shorts. • Practical, proved Sales Promotion Plans. • A line of outstanding beauty and quality, with every sales-getting feature.

No wonder Leonard is setting a new high record for sales year after year. No wonder Leonard dealers are enthusiastic. Write or wire today for more information about this valuable, lasting Leonard franchise. . . . **LEONARD REFRIGERATOR COMPANY, 14256 Plymouth Road, Detroit, Michigan, and London, Ontario, Canada.**

(793)

LEONARD

THE COMPLETE REFRIGERATOR



PERSONALITIES

By George F. Taubeneck

Those Chain Letters

Two pages of "Personalities" step up to plague you this week—not because the editor is feeling especially loquacious, but for the simple reason that last week's page was crowded out of the issue by a last-minute shift in an advertising schedule. So-o-o-o, on the opposite page you see last week's "Personalities," just as it stood before it was jerked.

Fact is, we came close to letting it stand as this week's page, without writing another. Why? Because we've been so busy this week opening endless chain letters and wondering what to do about them.

Of course you've heard of these chain "Prosperity" letters. In case you haven't, we'll quote you a typical sample—minus the names attached to it:

PROSPERITY CLUB
(In God We Trust)
FAITH, HOPE, CHARITY

"This chain was started in the hope of bringing prosperity to you. Within three days make five copies of this letter, leaving off the top name and address, and adding your name and address to the bottom of the list. Mail these copies to five of your friends to whom you wish prosperity to come.

"Be careful that you pick friends who understand that in order to benefit the chain must remain unbroken through six operative stages where his name progresses from sixth to first.

"In omitting the top name from the list, as stated above, send this person A DIME, wrapped in paper, in an envelope enclosing nothing else, as a donation to prosperity. In turn as your name reaches the top on the sixth operation you eventually receive donations amounting to \$1,562.50.

"Is this worth a dime to you? Figure it out and explain to five friends to whom you give copies, so that they too may see the advantage of carrying on the charitable letter.

"Have the faith that your friends had and this charm will remain unbroken.

"If you do not care to mail copies as requested, please return to the last person named below."

Not all of these letters are so modest as to ask only for a dime. Some of them want a dollar, and others are so flattering as to suggest that you mail a five-dollar bill to the name at the top of the list.

Something for Nothing

Lots of the chain letters we have been receiving have come from men in the refrigeration industry. Just why they happened to pick on us, we can't figure out, unless we look like an easy mark.

What most of the senders probably didn't realize was that an editor who travels has a helluva lot of friends and acquaintances scattered around the country. If we kept all the letters going which have arrived in this office we wouldn't have enough money left to eat, let alone keep the Auburn in gas and the Contax in film.

First one to arrive came from one of our very best friends, who has a responsible position with one of the largest manufacturers of refrigeration products in the world. We were flabbergasted. At first we even contemplated "keeping the chain unbroken," just to please this man, whom we like and admire so much.

And then we tried to think of five persons to whom we could send the letter. That convinced us it was no good. There would have been a transcontinental laugh at our expense, we figured, if we had been so gullible as to bite on this blue-sky proposition.

Just in case you don't know about it, the sender of a chain-letter is liable to prosecution by law. Here is an extract from the United States Official Postal Guide:

"Endless chain' enterprises designed for the sale or disposition of merchandise or other things of value through the circulation or distribution of 'coupons,' 'tickets,' 'certificates,' 'introductions,' and the like, are held to embrace the elements of a lottery, and also to be fraudulent. Matter of every kind relating to such enterprises should be excluded or withdrawn from the mails, and treated in accordance with sections 752, 756, and 774 of the Postal Laws and Regulations."

In other words, lay off.

Come to Our Party

Before we go any further something ought to be said about the "Refrigeration Fiesta," which the News is staging on the night of May 22 for the visiting A.S.R.E. members who will be attending the spring meeting.

Local A.S.H.V.E. members, as well as representatives of all Detroit refrigeration organizations, will help swell the party.

In case no one has ever told you before, Publisher F. M. COCKRELL of the News has a flair for throwing a good party (many readers will recall the good time they had at his entertainment for the all-industry conference here summer before last). This party will be no exception, and it should be worth coming a great many miles to attend.

Incidentally, the editorial department of the News will hold an "open house" to all A.S.R.E. members at all times during the convention. We want you to come in, take down your hair, and sob out all the sad stories you know about the fickleness of the public and the meanness of your competitors.

Comfortable chairs and cheap cigars (we want you to feel at home) await all comers.

Should you desire to be near us while here for the convention, and particularly on the night of the Fiesta, Hotel Webster Hall is just a block and a half down the street, where we have arranged for you to have special rates and accommodations (including free use of the swimming pool and gymnasium). Just ask for Assistant Managers GEORGE CHRISTENSEN or BOB STRAUS, and say that you came for the Refrigeration Fiesta.

David: Come Back, All Is Forgiven

Some weeks ago this department lost its temper publicly with a letter written by DAVID FISKE, national secretary of the American Society of Refrigerating Engineers. Things we said at that time weren't exactly sweet.

In the current issue of the society publication, however, Mr. Fiske (or his amanuensis, HELEN PEPPER) heaps coals of fire on our heads with the following kind words:

"A unique position among Detroit refrigeration and air-conditioning leaders is that occupied by Frank M. Cockrell, head of the Business News Publishing Co. and publisher of ELECTRIC REFRIGERATION NEWS and the REFRIGERATION DIRECTORY AND MARKET DATA BOOK. By means of assertive leadership through these well edited and comprehensive publications, Mr. Cockrell's influence in the refrigeration and air-conditioning industries is far-reaching.

"His publications are a great deal more than the average trade papers; indeed, many persons well qualified to judge have declared that ELECTRIC REFRIGERATION NEWS is the best trade paper now being published in this country.

"Under Mr. Cockrell's direction and the able editorship of George F. Taubeneck, the News covers the industry thoroughly, in a lively and readable style, and keeps its large readership up to the minute on new developments.

"The A.S.R.E. is especially indebted to Mr. Cockrell and the News in connection with the May convention of the society in Detroit, when an important entertainment feature is to be the 'Refrigeration Fiesta,' a party at the home of the Business News Publishing Co. on Wednesday night, May 22, with members of the News staff acting as hosts."

We'll be seeing you in Detroit, Dave, with an outstretched paw and a friendly grin.

Golden Legend

Other day HALDEMAN FINNIE, manager of the Refrigeration Division of the National Electrical Manufacturers Association, was looking over the editor's library, and noticed that there were very few novels in the collection.

"Don't you ever read fiction?" he asked, with raised eyebrows.

"Yep," we replied, "some of the publicity releases which come to this desk are pretty good fiction. But we read a novel about as seldom as we see a movie—which is darned rare."

"Well," says Mr. Finnie, "I'm going to remedy that situation at once. My wife has just written a new novel, 'Golden Legend,' and I'm going to give you a copy. Every man needs some fiction in his life, and I'm going to see that you get yours."

So he did. And—the boss being out of town last week—the editorial staff has been enjoying itself evenings with the latest novel by ISABELLA HOLT (MRS. HALDEMAN FINNIE).

"Golden Legend" is the detailed story of Gerda Vining, poor little rich girl, from her first pink-ribboned party to the settled life of a young

Dressing Up for the A.S.R.E.



In anticipation of the arrival of A.S.R.E. members next week, Andy Gantt manicures the front lawn of the home of Electric Refrigeration News while a neighboring man-of-all-work feels glad that he doesn't have to be so industrious.

matron with two small sons of her own.

That is, it is assumed that this is Gerda Vining's story, although she has to be an extremely cameo-like person to emerge clear-cut from the hordes of characters that crowd the pages like extras in a CECIL B. DEMILLE super-colossal spectacle.

The biography of the beautiful, too-rich girl is related by Mrs. Finnie—who evidently knows how the other one-half of 1 per cent lives—in a series of "legends," which represent the various periods (we suppose, in Gerda's case, they might be termed "epochs") in the life of a girl without any purpose in life.

The child's life begins, handicapped by her Grandfather Shotwell's millions and the rather ungainly sobriquet of "Gerda," in a picturesque theater which her parents have converted into a liveable establishment.

Stiffly conventional people move about in this unconventional setting. Gerda is constantly accompanied by her governess, servants obey her every whim, she is photographed for and gushed over in the society columns, yet her mother's society friends speak of her privately as "the poor little waif."

All through this "Legend of Neglected Childhood" there is a striving after sympathy for the heroine, and in one instance, at least, even the casual reader should feel a strong emotional response. That is when this Little Daughter of Midas slips away to watch ample Mrs. Boppity, the head gardener's wife, bake sugar cookies. (A name for a Dickens' character—Boppity.)

Kidnappers

The Shotwell millions attract kidnappers, with little Gerda as the victim, and following this adventure she is forever and inescapably enmeshed in Legend.

Madeline Acre, Gerda's governess, is the heroine of this "Legend of Outrage," but just when you've begun to feel a strong admiration for this character, she ups and marries old Horatio Shotwell, possibly for his money.

Life in the theater-house is sadly disrupted for Gerda when her parents decide that their marriage is a failure. Trudy Vining, old Shotwell's daughter, for all her superior coldness, selfishness, and snobbishness, is pitifully bourgeois in her jealousy of Rachel Conner, a neighborly soul to whom marriage.

George Vining has turned for friendship. So, divorce—

Gerda emerges from this tragedy of divorce a prematurely sophisticated child. Her father has been characterized by Magnate Shotwell as "a gentlemanly trifter," and to the reader he makes noises like a regular fellow until after the divorce. And then he quits trying.

It is difficult to reconcile the congenial chap who played Bach in the twilight, with the careless man who married the very ordinary, ostensibly lower-middle-class Miss Green. But that's people for you, and Mrs. Finnie delineates George with terrific and unrelenting realism, even if it does make you wonder sadly if human nature will never change.

Gerda feels keenly the loss of her "Mr. George," and when her beloved governess marries Grandfather Shotwell, the girl feels that indeed "the best is past."

While in her mid-teens she visits a schoolmate on the Maine coast, and innocently enough breaks up a war romance that was to have been a marriage within a few hours. Her hostess and family are so incensed that Gerda hastens away, taking with (and leaving behind) her an added Legend—that of a Dangerous Siren.

One member of the family alone remains loyal, then and forever, and that is the youthful, gangling Otis Cadwallader.

In due time Gerda becomes a conspicuous Debutante. Everything that money can buy is at her finger tips, yet she misses the home of her childhood. She must live hither and thither, and sometimes yon, with the separate members of her family. Her mother, hard and bitter, remains unmarried.

While experimenting with a few of the common (or garden) variety of wild oats, the girl meets Craig Wilcott at a party and subsequently falls in love with him.

This precipitates something of a mess. Craig has a wife. Too, Wally Armitage and Oty Cadwallader are in love with the heiress, and insist on muddling up the situation. Wally commits suicide, for which—perversely enough—Gerda is severely criticized, and Craig divorces Florrie.

Once married to Craig, Gerda finds that he, too, has a legend—his first marriage. What's worse, Florrie (Craig's first wife) refuses to leave the scene after the cue for her exit, and all but wrecks her husband's second

As if there weren't troubles enough, along comes the depression, and in its train (wotta pun, wotta pun) financial worries for the Railroad Baron. Horatio Shotwell is an old man now, and—fittingly—death overtakes him almost simultaneously with the closing of the banks.

Not until the Shotwell millions disappear does Gerda feel dependent upon any one. Compensatingly, financial disaster saves her marriage from total failure. Gerda and Craig, with their two little boys, are reduced to remaking their home in the old theater where Gerda was reared.

The widow of Horatio Shotwell returns there, too, in her original role as governess, but this time to a second generation. Soft lights, sweet music, and a cricket on the hearth as the curtain falls.

Unrealistic Portraits

We realize that this is a deplorably sketchy review, but novels are a little bit out of our line. Moreover, we truly feel that the only way in which one can really get the significance of a saga of such epic proportions as Mrs. Finnie's study of transitions in recent American social history is to read it *in toto*.

Mrs. Finnie writes crisply, and with restraint. Sample sentence (one which pleased us especially): "She came clicking down the tiled corridor, looking for Wally. Her face was fresh, welcoming, controlled—a fiancée's face."

Obviously she knows intimately the characters with whom she deals in the large—Chicago Gold Coasters. Although we wouldn't know about it ourselves, the details of the lives and habits of these silver-spooners seem patently authentic.

When she leaves her own sphere, however, Mrs. Finnie doesn't qualify as a very good reporter. Kidnappers, taxi drivers, and the like are admitted grudgingly into the pages of "Golden Legend," and it's easy to see that Mrs. Finnie is somewhat embarrassed and nonplussed by them.

These lower-strata characters of her book have little to do with flesh-and-blood reality, and are apparently hybrids born of a first-class imagination which has touched gingerly upon an unpalatable subject.

Here's a Contest

Especially open to attack in this respect are the speeches of the persons who are involved in Gerda's kidnapping. We submit a few herewith, as examples of how kidnappers wouldn't talk, and in hopes of stimulating a little game.

Just for fun, try rewriting these speeches in a more literal and dictaphonic manner. For the best work on this job submitted to this department, we offer as a prize a genuine ISABELLA HOLT autograph. Here they are:

"I'm paid to drive and you're not," said the chauffeur rudely. "I know where I'm going."

"Don't try to get out while we're going," said the driver, "you're liable to kill yourself."

"Come on wake up, Girly. It hasn't been a bad ride after all. Good little passenger."

"Say, listen," said the woman. "Your poppa and momma want us to take care of you for the night—didn't they tell you? They'll be around after you tomorrow or next day. Now you be a good kid and get to bed, and in the morning we'll have some fun and play dominoes. Come on, Gerda, you're half dead with sleep. Eat your sandwich and I'll get you a nightgown."

"You and me sleep here," said the woman. "See, I brought along a flannel nightie for you." (She was a baggy, wobbly, fat woman with felt slippers that scuffed, and she had forgotten to send her dress to the cleaner; but she had round, rouged cheeks and an air of trying to make friends.)

"If it looks all right," the voice went on, "you'll get a postcard in the morning mail, tomorrow or next day, advertising a shoe sale. That same morning you get on the outside front seat of a bus corner at 9 o'clock, and ride all the way downtown, and let us look you over."

Restored to Grace

Just as this page was going to press, a letter arrived which pleased us very much. It was from DWIGHT HOLLAND, who was the Newark, Ohio, Frigidaire dealer involved in the Macy bootlegging scandal which was disclosed for the first time anywhere in the March 13 issue of ELECTRIC REFRIGERATION NEWS.

Mr. Holland writes us ecstatically that, partly as a result of our efforts, he has been restored his Frigidaire franchise. On the first day he sold 16 Frigidaires.

He also writes that he has more wiring than he could handle in a month of Sundays, and that the skies are no longer cloudy and dark for the Holland Electric Co.

All's well, as Mr. Shakeawickedspear once said, that ends well.

After You've Gone - - -



When the show is over someone has to clean up, but the salesmen who enjoyed a recent pep session staged by Syd Caswell, Detroit G-E distributor, probably didn't realize it was as much trouble as all this.

PERSONALITIES

By George F. Taubeneck

Yep, More Babies

What, more babies? Yes, sir, more pictures of babies in this issue. And in case you were one of the long-faced boys (we suppose there were some) who thought it a helluva note to pick up their favorite business paper last week and find pictures of some babies in it, let us be so bold as to suggest it's about time you withdrew that nose of yours from those statistics, and began to take an interest in life.

Messages have been coming for days commending those baby pictures we published in the May 1 issue. Oh, the mailman hasn't been bowed hump-shouldered with fan mail, but enough approving comments have been made to us that we are encouraged to print more in the current issue.

We took these pictures on a train (note valise in background) which doesn't afford very favorable conditions for action photography. We don't know whose baby it is, but it's mighty sweet, don't you think?

After seeing the May 1 issue, Sales Promotion Manager GIL BAIRD of Westinghouse (who started all this baby picture business in the first place) wired as follows:

"I DARE YOU TO PRINT PICTURES OF YOUR CHILDREN."

To that challenge we can offer only the time-honored plaint of the bachelor, to wit: we have no children to speak of. Anyway, until we have some of our own, the pictures on this page are the best we have to offer.

Neil Bauer Gets Hitched

Maybe it would be appropriate at this time to insert the following social item, for the benefit of those who aren't in on the secret: NEIL BAUER, field sales manager of the Crosley Radio Corp., and Miss DOROTHEA LYNCH, secretary to POWELL CROSLY, JR., president of the corporation, were recently married at the Church of Our Savior in Cincinnati.

The marriage ceremony was performed by the bride's father, Rev. J. HOLLISTER LYNCH, who is rector of the church. Only members of the immediate families were present. Immediately following the ceremony the bride and groom left for a honeymoon trip to Florida.

The industry joins all Neil's friends in the Crosley organization in wishing him lots of luck and happiness.

Here's a New Idea

All this babies-bachelors-&-weddings stuff leads logically into a letter which came recently to this desk addressed to "MRS." George Taubeneck. It came from a gentleman who used to conduct sales schools and sales training courses for REX COLE, New York City G-E distributor, and it contains what we feel must be a brand new idea.

We'll quote the letter and let you judge for yourself the merits of this idea:

"Dear Mrs. (when/as/lf) Taubeneck: 'I will oil and adjust any of your electric appliances without charge. I will furnish you with complete information about any electrical merchandise in which you are interested without obligation.'

"I do this in order to introduce to you a form of service which you will find very useful, and for which the need can be shown by a few simple examples.

"For example, if the cord of your hand iron needs repairing the electrician may put a new plug on it for 50 cents. Yet there is a newly perfected cord which clamps to the ironing board, rolls in and out, and which would save you or your servant an appreciable amount of ironing time and energy. It may not be in stock at your local store because no one asks for it.

"Again, many women will testify that they were induced by a demonstrating agent to buy a new vacuum cleaner when their old one, properly adjusted, would have served quite well for many years. Hundreds of children are wearing glasses because they never had a proper study lamp.

"This letter implies no criticism of local stores or dealers, distributors, or department stores. But each is organized to sell something, and your satisfaction depends on chance contacts and the stocks on hand, which may be both limited or obsolete.

"Just glance at the list on the next page. Is there any store in the world that could display all these items, with due respect for your preference in size, styling, and price?

"For 12 years I have been in the electric business in work which necessitated familiarity with all new electrical products for the home and the agencies created to test them, such, for example, as Good Housekeeping Institute.

"I know that people constantly seek unprejudiced advice when purchasing, and frequently fail to get proper demonstration of the article. So I will:

"(1) Supply you with expert impartial advice on all makes of electrical merchandise of established quality and low owning cost;

"(2) Demonstrate to you in your own home whatever you select;

"(3) Sell it to you at prices as low as you would pay elsewhere.

"My stock-in-trade is expert knowl-

edge, established facilities for keeping it up to date, and ample funds to buy at lowest dealer's prices, billing you on the budget plan, if you prefer. My success depends on serving you well and serving you permanently.

"Won't you check on the next page your appliances which might need attention, and also those things on which information would be welcome, and keep it handy against the day when I shall call?"

RUST HILLS,
441 Ocean Ave., Brooklyn

Alphabet Efficiency

A bright, brisk, bustling young woman came into the office the other day to apply for a job next June. It seems that she is an executive of some sort on the *Michigan Daily*, student newspaper at the University of Michigan; and after her graduation she wants to continue on her journalistic career.

So-o-o-o-o-o, she isn't wasting any time making her contacts. And just so we won't forget her, she sends us every day the current copy of her paper.

Now we still don't know just what she does over there, but a young man named "BUD" BERNARD does conduct an interesting kolyum in that paper. One day last week we ran across this gem in his kolyum—a bit which is a revelation of what the government alphabet agencies are doing with the next decade's tax revenues:

"Two students were working for the FERA under the Federal appropriation for student aid.

"They were assigned to the same job—one experienced in this work was the boss; and the other, new on the job, was his assistant.

"They had a job cutting pipe for plumbing.

"Say," said the assistant, 'do I get paid by time?'

"Sure, you dumb cluck," was the answer.

"But I haven't done anything."

"The old hand surveyed his companion with contempt and then slowly lit a cigarette.

"You are supposed to help me aren't you?" he exclaimed.

"Yes."

"Well, then," he said, holding out the match, 'if you have to be so damn conscientious, blow this out.'

And for the benefit of other Michigan residents who join us in the general chorus of cussing about the weather here, we again quote Mr. Bernard:

"We read not so long ago that a psychology professor showed that most people do their best work immediately after a change of weather, such as heat after cold, or rain after sunshine.

"This should make most of us at Michigan geniuses."

More Sales Reports on Air Conditioning

"Get 'em while they're hot" is the selling philosophy of the Slater Engineering Corp. of Memphis, Tenn.

Here's how a lead was obtained for an air-conditioning job in a local outlet of a big national chain of women's dress shops, a survey made, requirements calculated, price estimated, three contracts drawn up, and the order signed while a competitor's salesman sat outside, all in seven hours.

Work was started the very next day, and the job was finished in one week!

The national chain (100 stores) is "Grayson's." The head of this organization is a fast-moving business executive named KIRCHNER who arrived in Memphis one day last summer when the thermometer was trying to beat Prof. PICARD'S altitude record.

On his way from the station Kirchner stopped for a "pause that refreshes" in the Pantaze Drug Store, which boasts one of Slater's Carrier installations. Kirchner complimented the management on the comfort of the store, and asked whose air-conditioning system it was.

The clerk told him, and said he would find another Carrier job on the same street, Thompson's Restaurant. This job was brand new, and had been in operation only one day.

Thompson's Restaurant turned out to be next door to the local Grayson store, and so Kirchner lunched there and spent the remainder of the day there transacting his business and sipping lemonade.

In the meantime the drug clerk and Thompson's manager phoned "BUDDY" SLATER, who proceeded to shatter the tradition of southern lassitude by finding Kirchner and starting to work on him in nothing flat.

Kirchner told Slater that he was leaving on the 6 o'clock train, and that he would like to buy an air-conditioning system "just like Thompson's." And in a few hours he did.

Cold Selling

There has been definite headway made during the past year in the cooling and air conditioning of the smaller retail stores in the Cleveland district, according to "LES" FOLEY, Carrier man in that territory.

DAVE KRAUS, engineer for the Harten-Knodel Distributing Co. of Cincinnati (this concern is also a Norge distributor), cracked out several home runs in the Ohio territory, one being a demonstration that air conditioning can be sold in the winter as well as the summer to retail stores.

Kraus signed the Spot Cafe in Cincinnati in the bitter cold of November for a 39L-7 Store Weathermaker and a 56-100 compressor, when the owner only planned to spend about \$300 for ventilation.

In two days Kraus sold him an air-conditioning job for more than 10 times that amount. This same man

landed an order from the Mayer Jewelry store. The basement and the main floor of this establishment were conditioned with a 39L-7 Store Weathermaker, one 55-100 compressor, and one 55-50 compressor.

A. M. ROSENBLATT of Rosenblatt & Hunt, Carrier Charleston, W. Va., dealer, is sold on air conditioning to the point of installing a 39L-2 Weathermaker and a 53-15 compressor in his home.

• Boot & Co. of Grand Rapids, Mich. (which is also in Carrier's Cleveland district), has opened the way for a considerable volume of apple storage work in the Michigan territory. Last fall JACK COOPER of this company sold a job to the Klenk Farm, installing four 15K cold diffusers and a 56-75 compressor, for an apple storage house.

Getting Facetious

Some wag from Sunrise Utilities Co., Inc., 245 Sunrise Highway, Rockville Center, N. Y., sent this department an anonymous contribution not long ago which—if you like that kind of humor— isn't bad at all.

He took an advertisement of Parke, Davis & Co. (manufacturing chemists) which appeared in *The Saturday Evening Post*, entitled "The Passing of the Buckeye," and use this title as part of a little story involving the names of many electric refrigerators.

The advertisement has nothing to do with refrigeration, but weaves an advertising message around the lowly "buckeye" (horse chestnut). Its illustration is a pen-and-ink sketch of a homely "Gay Nineties" scene.

Underneath this illustration—writing around the headline, "The Passing of the Buckeye"—our unknown friend has penned the following caption:

"The Holmes depicted are not Westinghouses, nor do the trees in bloom indicate Frigidaire, but the land was formerly the property of the Iroquois. Mr. Grunow is here shown pointing out to a lady Mayflower descendant the passing of the Buckeye, which becomes a mere Coldspot in the Potter's field."

Our TED QUINN, who enjoys that sort of thing, goes the gentleman from Rockville Center one better with this atrocity:

How YORK you today?

Me? Oh, I'm in fine FEDDERS.

Then you're not ILG anymore?

Sir, that is an ANSUL!

Sorry, old boy—I didn't mean to RANCO you. I was only going to suggest that you G & O to see a doctor and take a KEROTEST. In the future, I'd PUFFER that you be a bit more CURTIS to well-meaning friends. I was never no INSULITE in my life.

Well, forget about it—HYDRON know what's been the matter with me the last few days. You're not the first person who's rebuked me for speaking to them so CROSLY. Even NORMA-HOFFMANN, the HUSSEY, commented on the FRIGIDAIRE I had toward her when I met her.

Oh, is DESSAU?

Yes. But the worst thing of all happened at dinner last night. My little girl was asking me about the fable of the CROWE and the FOX, when, without any cause at all, I lost my TEMPRITE there at the table, and spoke to her as I SHELDON do to anybody.

What happened then?

Well, little KELVINATOR RUSS beef in silence, and ran right to her mother. I could just see my wife BRISTOL. She told me later she couldn't understand why she'd ever let me lead her to the ALTER.

That must have been a SWIFT lesson to you, eh?

It certainly was. Well, goodbye now. Be sure TECUMSEH me sometime soon. ELECTROLUX the door at 10 o'clock—but GRUNOW how to get in.

The Parade Continues



The Baby Parade continues, by popular request! Recently you were shown pictures of the Gil Baird's newcomer and little Carol Cranston, a blue-ribbon Detroit baby. This week we give you—because you encouraged us—a youngster, photographed on a train.



(1) "I want food! C'mon Mother, let's see about some action!" (2) "I saw another kid's picture in a magazine ad last week—wonder what paper this'll get into. Maybe the one Daddy's always bringing home—'Frigeration News or something like that.'" (3) "Maybe I'm looking too far ahead—but I wonder if I'll get anything at all to eat before I get home."

HOME SERVICE

Fern Snider of Georgia Power Co. Tells Housewives How 'Right' Box Saves Food Money

NEW YORK CITY—On a normal family food budget, intelligent marketing plus the proper size household electric refrigerator, ought to save at least \$1.50 a week or \$78 a year, in the opinion of Miss Fern Snider, home service director of the Georgia Power Co., writing in the June issue of *McCall's Magazine*.

Miss Snider, in her *McCall's* article, says the only dissatisfied electric refrigerator users she and her staff of home service women have ever found are the families who, to save money on the purchase price, have bought boxes that were too small.

If adequate size electric refrigerators are bought for home use, advantage can be taken of "week end specials" on various meats, vegetables and fruit. Buying food in bulk, as Miss Snider suggests, has saved housewives from \$1.50 to \$2.66 weekly.

In her article, Miss Snider shows how variety as well as economy can be put into the family's menus by using electric refrigerators to take advantage of bulk food buying. Also she gives practical advice on proper food storage.

Misuse of electric refrigerators cited by Miss Snider include the storage of

hot foods, condiments, inedible parts of vegetables, and unopened cans of food in refrigerators, too close wrapping of meats stored in mechanical refrigerators and improper covering for other foods.

The right refrigerator, because it has room for food bargains, is money in the bank and an important aid to reduced living costs, says Miss Snider.

"Think what happens if an electric refrigerator is too small. It will take care of only very limited supplies, and many bargains will have to be passed by. My experience has been that the savings made by buying food in quantity at special prices will pay, not only for the operation of a large refrigerator, but over a period of years, for the refrigerator itself.

"Being a practical person, I have put my theory to the test many times. I make out typical menus, each set covering a week's food expenditure for a family of five. Then I shop twice for each week, once during the first of the week and again on Fridays, when food specials are on in Atlanta. On different sets of menus I save from \$1.70 to \$2.05 weekly.

"Recently I shopped for one week's

meals recommended in Dr. McCollum's 'Spring and Summer Menus.' In Atlanta for the week-end of March 8 there was a saving of \$2.66.

Savings for One Week

Marketing List for One Week

Perishables	Normal Price	Sale Price	Saving
Oranges, 1½ doz...	.29	.20	.09
Strawberries, 2 qts.	.60	.54	.06
Lemons, ½ doz...	.08	.07	.01
Pineapple, 1 (fresh)	.35	.25	.10
Cherries, canned...	.12½	.10	.02½
Prunes, 1 lb.	.15	.12½	.02½
Celery hearts, 2	.15	.11	.04
Carrots, 3 bunches	.22½	.21	.01½
Tomatoes, 4 lbs.	.80	.70	.10
Cabbage, 3 lbs.	.15	.12	.03
Green peas, shelled, 2 lbs.	.30	.27	.03
Peppers, 4	.30	.20	.10
Asparagus, 3 bunches	1.20	.99	.21
String beans, 3 lbs.	.22½	.18	.04½
Lettuce, 2 heads	.20	.12	.08
Spinach, 2 lbs.	.25	.20	.05
Radishes, 1 bunch	.10	.07½	.02½
Scallions, 1 bunch	.10	.06	.04
Beet greens, 2 bunches	.25	.20	.05
Bacon, 1 lb.	.39	.35	.04
Lamb chops, six, 2 lbs.	1.00	.90	.10
Lamb shoulder, 4 lbs.	1.00	.88	.12
Chicken, 4 lbs.	1.00	.80	.20
Steak, 2½ lbs.	1.18	1.00	.18
Fish, 3 lbs.	.54	.34	.20
Tomato juice, 3 cans	.25	.23	.02
Pineapple juice, 2 cans	.30	.25	.05
Roquefort cheese, ½ lb.	.15	.12½	.02½
Cream cheese, 2 pkg.	.25	.20	.05
Cottage cheese, ½ lb.	.15	.10	.05
American cheese, 1 lb.	.23	.19	.04
Eggs, 2 doz.	.66	.50	.16
Butter, 2 lbs.	.88	.74	.14
Marmalade, 1 jar	.35	.23	.12
Jam, 1 jar	.23	.19	.04
	\$14.40½	\$11.74½	\$2.66

"As the biggest savings are always found in meats, it seems more sensible for a homemaker to discover what the specials are, and build the week's menus around them.

"Let us suppose a leg of lamb (with chops) is attractively priced. In the

days before adequate refrigeration, one bought the roast and served it on successive days—for fear of spoilage. Today, a leg of lamb may be bought on Friday, the roast (with chops removed) served on Sunday, chops on Tuesday, shepherd's pie on Saturday. The family does not object, because other meats (we hope at special prices) have been served in the intervals."

On a normal family budget, declares Miss Snider, such specialized planning ought to save at least \$1.50 a week, or \$78 a year. This sum would take care of operating a large refrigerator, and leave a surplus to apply to the original cost. In other words, the refrigerator works for nothing, and even pays something for its keep!

Savings on Quantities

"Of course, it may happen that the shops in your town do not have week-end specials," says the Georgia Power Co. home economist. "Even so, nearly all markets offer savings on items bought in quantity—two heads of lettuce for 15 cents instead of one at 10 cents, for instance—and picking up bargains when you find them will take some of those tucks I mentioned. Then too, large cans of food products are cheaper, proportionately, than smaller ones. The surplus quantity may be safely stored in the refrigerator for several days until it can again take the family by surprise.

"Every refrigerator ought to help earn its keep. It should save either time or money; and it may save both—which is a break for us homemakers. When my staff and I see hot food placed in refrigerators, we groan, because we know it raises the temperature of the box compelling the motor to work overtime—and motors hard-heartedly charge for overtime.

"Such items as condiments, unopened cans of food, and the inedible parts of vegetables should never be stored in the refrigerator.

"Refrigeration is slowed down, too, when cold air inside the refrigerator cannot circulate. That is why we must leave open spaces next to the walls of the box and among the containers. If we don't obey this rule, we are either making the motor work overtime or impairing the keeping qualities of the food. Both are wasteful, you'll admit.

Advantage of Dry Air

"The dry air in an electric refrigerator is one of its principal advantages, because it is less likely to carry odors from strongly-flavored foods. It also discourages the growth of bacteria, which thrive on moisture. But the very fact that the air is dry means that it tries to absorb moisture from the food. To retain this essential moisture, it is advisable to cover everything except those foods that have a natural shell, such as oranges and eggs.

"And you know that you never put bananas in the refrigerator, because chilling prevents them from ripening and checks the development of their flavor.

"Uncooked meats should never be covered closely—the confined moist air encourages the growth of bacteria. They should be placed in the defrosting tray (the coldest spot in most refrigerators) or on a plate, and waxed paper laid lightly over them.

"Of course you immediately remove any market wrappings; they prevent cold air from penetrating to the meat.

"The electric refrigerator leaps just as nobly into the breach in time-saving as in money-saving. For instance, it takes no longer to mix the batter for two cakes than it does for one."

"So why not double the recipe for almost everything you bake—biscuits, pastry, rolls, cakes? Bake what you need for the moment, and store the rest in the refrigerator for future use. One thing about cake batters, though: I find that cakes are lighter if they are stored in the pans in which they are to be baked.

"As a matter of fact, doubling almost becomes a mania, as it does with some bridge players. A custard base for ice cream will keep many days, so double—or triple it, if you have that kind of a family—and keep the reserve in a covered jar.

Cook double quantities of certain vegetables, which may be heated to original freshness by steaming.

"Spinach, for instance, may be used as greens one day, and later as soufflé.

"White sauce can be prepared in quantity and stored in a covered container for 3 or 4 days at the least. Make it fairly thick—3 tablespoons flour to 1 cup milk is a good proportion—so it can be thinned to the desired consistency as it is used. Beat it thoroughly before it is reheated. Then add liquid gradually, stirring carefully to prevent lumps.

3 Crosley Distributors Visit Factory

CINCINNATI—J. E. Johnson, president, Cooper Louisville Co., Crosley distributor at Louisville; Clarence S. Tay, manager, Crosley Distributing Corp., Chicago; and Fielding H. Robinson, manager, Crosley Distributing Corp., New York City, were visitors at the Crosley factory last week.

Home Ice Cream Maker



Mix being poured in freezer (top) and freezer being placed in evaporator (below).

Hamilton Beach Makes Ice Cream Freezer for Use in Refrigerator

RACINE, Wis.—Just introduced by the Hamilton Beach Co., division of Scovill Mfg. Co., is the Hamilton Beach Iceless Freezer, designed to permit the making of ice creams, sherbets, and frozen ices in mechanical refrigerators.

The freezer, cylindrical in shape and equipped with motor-driven paddles which stir the mixture constantly while it is freezing, fits into the ice cube tray compartment of the refrigerator. It has a capacity of 1½ quarts. Retail price of the appliance is \$9.95, and \$10.45 west of the Rockies.

To freeze ice cream, sherbets, and other frozen desserts, the ingredients are placed in the container, the refrigerator's cold control turned to fastest freezing speed, and the freezer put in the ice cube compartment. The freezer cord is then plugged in the light socket. Motor driving the paddles stops automatically when the mixture has been sufficiently frozen. Motor and paddles are then removed and an extra lid put on the container.

The freezer is made of easy-to-clean, die-cast aluminum, and paddles are of wood, to eliminate metal-to-metal scraping. The whole unit is 12½ in. long, with a diameter of 3½ in. The cord on the freezer's motor is 7 ft. long, and is flat, so that the refrigerator door can be closed on it without injury to the door gasket or cord.

Clara Dean Holds Many Meetings on Coast

LOS ANGELES—Miss Clara Dean from the G-E Institute at Nela Park, Cleveland, while guest of Bess Meals, home economist for the George Belsey Co., Ltd., G-E distributor here, contacted newspaper and utility home economists, department stores, and Belsey company dealers.

Miss Dean's activities during her week's visit included three radio broadcasts sponsored by three Los Angeles newspapers, a two-hour electric cookery demonstration at Bullocks' department store, a two-hour demonstration and sales talk for Belsey company salesmen and dealers.

Miss Dean also spoke on the G-E Kitchen Institute and her work there at a tea given in her honor by Bess Meals.

Thirty Los Angeles home economists attended the tea.

British Explorer Takes G-E Refrigerator Along

SCHENECTADY—When Capt. R. Stewart Murray leaves on an exploration trip into the Rupununi district of British Guiana to record the customs and habits of four isolated tribal groups of American Indian aborigines, part of his equipment will include a G-E electric refrigerator and G-E electric fans.

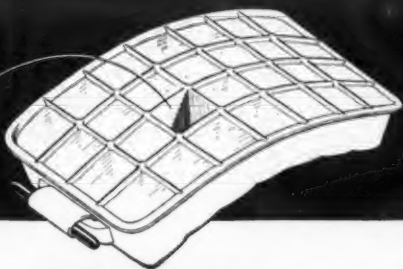
By means of a small electric power plant operated from a gasoline engine, sufficient electricity will be generated to operate a radio transmitter and to supply current for the refrigerator and fans.

"The electric refrigerator will serve more useful purposes than just supplying us with ice cubes for cool drinks," Capt. Murray said. "We will be able to preserve specimens and cultures, which would be impossible otherwise."

Utility Management Corp. Moves Main Office

NEW YORK CITY—The Utility Management Corp., formerly the J. G. White Management Corp. of this city, has moved its offices from 120 Wall St. to 150 Broadway, reports A. E. Ward of the management company.

A TRAY FULL OF TRICKS!



"COLD FACTS"

No. 5

Would you like to be paid for "cold canvassing?" Flexible Rubber Trays and Grids will do it! And remember—all models of the refrigerator you sell should come factory equipped with these modern conveniences. **INSIST** upon it! Write to your manufacturer or direct to us. The Inland Mfg. Co., Dayton, Ohio.



Prospect: "No, my refrigerator is only a few years old. I'll not be in the market for some time... I hope!"

Salesman: "Then you'll want to modernize it by purchasing several Flexible Rubber Trays."

Prospect: "Oh, yes indeed! I need two. All my friends like them."

If they help sell some models—
Flexible Rubber Trays and Grids
 will help sell all models of the Refrigerator you handle!

Reader Suggests Specialty Dealers Train Youths from CCC Camps as Salesmen

602 Eagle Rock Ave.
West Orange, N. J.

Editor:

As you are on the subject of salesmen's compensation how do you like the plan roughly thrown together in the enclosed article.

Mr. P. B. Zimmerman thinks it has possibilities. What do you think?

L. W. WHITE.

Mr. White's plan is as follows:

The past years have seen many changes in almost every phase of our social and economic life. The coming years will undoubtedly see many more, so perhaps now is not untimely to consider one phase of our business life which, to my mind, needs not only consideration but action.

It is an indisputable fact that specialty organizations have done immeasurable good in pushing the levels of our standard of living upward, not to mention the creation of large industries and the subsequent employment to thousands.

Today I think almost every specialty organization of the country is faced with a problem—the problem of the scarcity of man power in the field. Young, vital, hard-hitting, business producing man power. Where is the salesman that cannot use more or better men?

Producing Nothing

Yet, this scarcity of man power, like the scarcity of so many other things, is a scarcity amid plenty. Thousands of young men, a percentage of whom would undoubtedly make fine salesmen, are rotting in idleness, producing nothing for the common good.

The C.C.C. camps all over the country are absorbing a portion of these young men. These camps, I understand, are doing marvelous work in building and maintaining these men physically and mentally, but the term of service is comparatively short. When they leave these camps what are they to do?

Does not specialty selling offer them an excellent field? Unquestionably it does. Salesmen can start the wheels of industry and hold them at top speed. If I were the head of a national organization, depending more or less upon specialty salesmen for my turnover in good times and bad, I would give serious thought to these men leaving the C.C.C. camps as ideal raw material.

Educate Them for Selling

By direct cooperation with the heads of the C.C.C. I would attempt to inject into the lives of the men, while at the camp a series of lectures and talks on the fundamentals of specialty selling and its possibilities of an interesting and profitable career.

By means of tests, I would grade them and sift those with a natural aptitude for the work. At or near the local distributorships, I would outfit salesmen's recreation centers, consisting of dining room, dormitory, and lecture room. The lecture room would serve as a recreation room. The quarters would be of suitable capacity for the number of men the operation called for, be it 10, 50, or 100.

The men would be divided into squads or crews and each squad be under the direction and supervision of a captain or crew manager. The captains would have separate, but integral and slightly more pretentious, quarters and would be selected by direct sales competition.

Charged Credits for Costs

Each salesman would be assessed, at the first of every month, a number of credits sufficient to cover his share of the cost of maintaining the quarters. Each credit would represent one dollar in sales and would have a predetermined cash value, depending upon the average percentage in commission to be paid. In other words, his board and keep would be automatically taken care of by the first sales made by him.

The standing of each salesman would be conspicuously posted in the recreation room; pay day would be once a month when the men would receive a check for the value of the credits earned over and above his assessment.

Surplus for Low Months

If the men agreed to create a reserve with the company during the top months to carry the low months this could also be deducted. Each new salesman selected would be given gratis credits sufficient to cover his assessment for the first month or whatever training period was deemed advisable.

This somewhat radical departure from the present orthodox method of handling specialty salesmen recommends itself to me for several reasons:

First: It permits close, direct supervision of the men without the necessity of paying a salary. Working hours could more easily be fixed and checked.

Second: It would guarantee full

attendance at all sales meetings and permit them to be held often. The men could literally eat, sleep, and talk their products.

Third: It would automatically eliminate the dead wood, as obviously a man that could not earn sufficient credits to cover his assessment for living quarters over a reasonable period, could not expect to enjoy them at the expense of his fellow salesmen.

Lower Cost of Living

Fourth: As the living quarters would be maintained on a no-profit basis, the cost of food and lodging to each salesman should be reduced, making it easier for him to meet this cost during the slow or off season and thereby helping him greatly in maintaining his courage and confidence so absolutely essential to a satisfactory sales curve.

Fifth: As the bulk of the executive and managerial work and responsibility for the smooth operation of the living quarters would be relegated to the salesmen themselves, under the direction of the sales promotion manager or some other officer of the company, an organization of elected members would be desirable. This organization would assist in the creating of a strong fraternal spirit between the salesmen and a close bond of affiliation between themselves and the company.

Sixth: This would in no way interfere with the older, married, or socially established men in the business. They would continue as at present but it would offer an inducement and make it possible for a stream of enthusiastic young blood to enter the business.

Seventh: It is a human way of handling men. No man can or should be expected to do a good job if he does not know where his next week's board and room money is coming from.

Investment in Showroom

Of course the investment of outfitting the salesmen's center is an angle not to be overlooked, but this investment, compared to that of a first-class modern branch or showroom, sorrowfully undermanned and producing much less than its quota, is not too great to be tackled.

Undoubtedly there are many "cons" in this plan, but faced squarely and compared with the many evils detrimental to the 100 per cent performance of our present methods, it does, to my mind, warrant a trial.

Cooper Salesmen Seek 'Golden Gloves' Prizes

CHICAGO—R. Cooper Jr., Inc., General Electric distributor for this territory, is conducting a "Golden Gloves" contest, a special campaign for dealers and dealer salesmen, in connection with the G-E national sales contest, "Refrigerania Sweepstakes."

Refrigerators, washers, ironers, vacuum cleaners, ranges, dishwashers, and work-shops purchased through the Cooper organization and delivered between the dates of April 22 and May 18 will count in the contest.

Award for the contest is a free trip to Chicago, an invitation to the R. Cooper "Victory Banquet," and a ringside ticket to the International Golden Gloves fights to be held May 22 at Soldiers' Field, when the champions of Italy and the champions of the United States battle for the Golden Gloves championship of the world.

Dealer organizations have been divided into two parts according to quota.

The Class "A" dealer, Class "A" dealer salesman, and the Class "B" dealer who deliver the greatest percentage of the Refrigerania Sweepstakes quota between the dates of April 22 and May 18 will be declared winners and receive the awards.

Lewis Joins Sales Staff Of New Distributorship

BALTIMORE—W. R. Lewis, previously with Barber & Ross, former Washington distributor for Kelvinator, has been appointed assistant sales manager for the appliance division of Southern Wholesalers, Inc., Baltimore and Washington distributor for Kelvinator and Leonard electric refrigerators.

In previous years Mr. Lewis was directing head of the Baltimore Victor Distributing Co. and prior to that was district sales manager for RCA Victor Co., covering the central west with headquarters in Chicago.

Southern Wholesalers is now handling all Kelvinator products, including household electric refrigerators, commercial refrigeration, and air-conditioning equipment.

William E. O'Connor is president of the distributorship and Francis C. Ferber is secretary.

Dealer Builds Sales With 'Free Trade' Advertising

SPRINGFIELD, Ill.—L. E. Nantkes, manager, Community Natural Gas Co., Crosley dealer at Nokomis, Ill. (population 2,400) has evolved a promotional plan with a "free trade" angle to build up store traffic and automatically develop contacts and a mailing list of prospective purchasers of electric refrigerators, says A. Turner, president and general manager, Central Auto Equipment Co., Crosley distributor here.

"Mr. Nantkes sold eight Crosley Shelvadors in 1934," states Mr. Turner, "and so far this year has sold 10 Crosley radios and five Shelvadors. Mr. Nantkes expects to sell 25 or 30 Shelvadors this year."

"Mr. Nantkes plan is described in a small leaflet which was distributed to the people in the trading area of Nokomis." It reads:

"\$10.00 in trade FREE."

"Sometimes we wonder how many people read advertisements, so we are making this test to find out. All you need to do is fill in your name on the coupon below, tear it out and deposit it in a container in our store on or before 8 o'clock Saturday, April 27, at which time a drawing will be held to determine the winner. You need not buy anything to enter. Only one chance to a customer."

"I desire my chance to apply on
Refrigerator
Washer
Gas range
Radio
Farm light plant
Electric cleaner

Name
Address

Largest Apartment Building in Ohio Equipped by G-E

CLEVELAND — The Commodore Apartments, said to be the largest apartment house building in Ohio, has been equipped with 181 General Electric refrigerators, of the Monitor top X-4 type.

Aaron S. Kossler, apartment house division manager of Electrical Housekeeping, Inc., Cleveland G-E distributor received the order for the new refrigerators from Robert F. Berwald, receiver for the apartment building.

Also installed were one G-E CM-6 1 hp. compressor and two EC-17 evaporators in a 45 cu. ft. cabinet in the apartment house restaurant.

The individual refrigerators in the apartments replace a multiple system which had been in service 11 years.

Stewart-Warner Program Shifts to New Schedule

NEW YORK CITY—Horace Heidt's Brigadiers, Stewart-Warner program broadcast over the Columbia system, will shift to a different schedule with the inauguration of daylight saving time. The new schedule will be 10:30 to 11:00 p. m., EDT, on Thursdays.

Dealer Makes 29 Sales in 1st Month in New Store

GRANITE CITY, Ill.—Kenney Hammon, owner of the Hammon Electric Co. here, who recently opened a home utility store as a separate unit from his automobile business, sold 29 Westinghouse electric refrigerators during the first month in his new location.

Altered Policy on Show Brings Results in San Diego

SAN DIEGO, Calif.—With no door prizes and no free samples, the percentage of prospects at the recent annual Refrigeration Show here showed a decided increase over that of former shows, reports J. Clark Chamberlain, secretary-manager of the Bureau of Radio & Electrical Appliances of San Diego County.

Fourteen makes of refrigerators were represented, and all but two of the exhibitors reported having made direct sales at the show. Refrigerators on display included the Coldspot, Crosley, Electrolux, Frigidaire, General Electric, Gilfillan, Grunow, Hotpoint, Kelvinator, Leonard, Norge, O'Keefe & Merritt, Ward's, and Westinghouse.

The show, which was held at the San Diego hotel, was sponsored jointly by the Electric Refrigeration Bureau of San Diego County and the San Diego Union and Tribune.

Miss Florence Miller, home economist and hostess, gave periodic demonstrations of chilled food recipes.

Crosley Distributor in Syria Visits Factory

CINCINNATI—Najib Chahroui, of Najib Chahroui & Freres, Beirut, Syria, Crosley distributor for Syria and Lebanon, was a visitor at the Crosley factory last week.

Mr. Chahroui stated that the market for electric refrigeration is just getting started in Syria. "It has made slow progress in the past five years," he said, "but now gives evidence of a very rapid growth and development since people recognize its advantages."

Easier to Sell . . .

THE ONLY REFRIGERATOR THAT IS DIFFERENT.

Exclusive new patented CONSERVADOR gives outstanding selling advantages that women can see and understand

No other refrigerator today offers such outstanding sales possibilities as the Fairbanks-Morse refrigerator.

Seldom has a product appealed so powerfully to a prospective customer at first sight. One look . . . and all previous thoughts of other refrigerators are swept away in a quick rush of acceptance and preference for the Fairbanks-Morse . . . because it contains every worth-while refrigerator feature plus the exclusive new pat-

ented CONSERVADOR. But the most convincing proof of sales possibilities in any product is recognition by dealers.

In only four short months, dealers in practically every important town from coast to coast have eagerly grasped the opportunity of getting the Fairbanks-Morse franchise! These alert, aggressive dealers know refrigerators. They know what will sell—and what will not. They know that

here, at last, is a refrigerator that has everything.

That's why they're breaking all records to sign up for the most valuable dealer franchise in the refrigerator field today. Fairbanks-Morse Home Appliances, Inc., 430 South Green Street, Chicago, Ill. Cable Address: Fairmorse, Chicago.

FRANCHISES are still open in some localities for a few dealers of the right type. There is yet an opportunity to tie up with one of the oldest, largest and most respected manufacturing organizations in America. Write, phone or wire for complete information.

FAIRBANKS-MORSE Refrigerators
RADIOS - WASHING MACHINES - IRONERS
105 YEARS OF PROGRESS IN PRECISION MANUFACTURING

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office
Copyright, 1935, by Business News Publishing Co.
Published Every Week by

BUSINESS NEWS PUBLISHING CO.
5229 Cass Ave., Detroit, Mich. Telephone Columbia 4242.
Production Dept., 550 Maccabees Bldg., Columbia 4245.

Subscription Rates—U. S. and Possessions and all countries in the Pan-American Postal Union: \$3.00 per year; 2 years for \$5.00. Canada: \$6.00 per year (due to special tariff). All Other Countries: \$5.00 per year (U. S. Money). Notice: We employ no subscription agents or solicitors. Pay no money to strangers claiming to represent this company. Send orders and remittances direct by mail.

F. M. COCKRELL, Publisher

GEORGE F. TAUBENECK, Editor
PHIL B. REDEKER, Managing Editor
A. J. CUTTING, Statistical Editor
FRANCES MCNAMARA, Assistant Editor
THEODORE T. QUINN, Staff Writer

GEORGE N. CONGDON, Business Manager
JOHN R. ADAMS, Production Manager
JEAN H. ADAMS, Subscription Manager
HELEN K. GILMORE, Assistant Adv. Mgr.

Member, Audit Bureau of Circulations
Member, Associated Business Papers
Member, Periodical Publishers Institute

VOL. 15, No. 3, SERIAL NO. 321, MAY 15, 1935

Safety Advertising and Refrigerants

Note: See first letter in "Letters" column on this page.

REFRIGERANTS have furnished the impulse and the provocation for some of the bitterest arguments the electric refrigeration industry has ever seen. For many years the industry was divided into two camps, viz., the users of sulphur dioxide and the proponents of methyl chloride. These two groups of manufacturers engaged in what were almost pitched battles in city halls all around the country while the various municipal ordinances relating to the installation of refrigeration equipment were being considered.

In the more recent past the development of Freon (dichlorodifluoromethane) precipitated a new series of quarrels. Claiming an unusually high degree of safety, the manufacturers of Freon sought to have it exempted from the municipal code restrictions which generally govern the use of other refrigerants. Sulphur dioxide and methyl chloride adherents fought such exemption moves bitterly at first; although the opposition to Freon has been dying down since more and more manufacturers have begun using it and its derivatives.

Latest refrigerant squabble has centered around the advertising of Grunow refrigerators, which use Carrene. Previously the refrigerant arguments had been kept within the industry, almost by tacit consent. Bill Grunow, however, is not one to follow the crowd. Like Henry Ford, Bill works strictly by and with himself. So it is that the refrigerant question has been brought out into the open for the first time with Grunow's advertising of Carrene.

Grunow advertising has carried a safety theme for more than two years now, and there is still no evidence that it has worked any serious handicap on the industry-at-large. Practically every manufacturer of consequence has sold more refrigerators since Grunow entered the picture, the industry has gone on to higher and higher sales records, and there is nothing to indicate that the public has been scared.

Most electric refrigerators on the market nowadays are pretty much alike. Practically every manufacturer which has survived the competitive battle of the last few years is now giving excellent value for the money. Hence, advertising departments and advertising agencies have been scratching their heads to find sales themes which will distinguish their particular make from others on the market.

Grunow is convinced he "has something" in his refrigerant, Carrene, and he has been playing it for all it's worth. Not having set the refrigeration world on fire as yet (Grunow sales are believed to have been running somewhere in the neighborhood of 50,000 to 60,000 annually) it is probably safe to assume that if Messrs. Grunow and Wanamaker could find a new and more appealing advertising theme, they'd adopt it.

For that matter, almost any other manufac-

turer would be glad to find some exclusive feature which would identify a product amidst all its competitors.

General Electric was first to prove the value of identification. The success of the "Monitor Top" dumbfounded the industry, and probably even surprised some of the G-E men. In the beginning, General Electric merchandisers considered the "dust-catcher squirrel cage" unit on the top a distinct handicap. It was the continual butt of jests from competitors. Yet—giving due credit for the excellent promotional and merchandising job G-E did in capitalizing upon this supposed weakness—it should be noted that all the ridicule of competition and all the natural aversion of women to the contraption on the top of the box failed to offset the advantage that everybody in the country soon learned to distinguish a General Electric refrigerator as far as he could see it.

More recently the Crosley Shelvador stands out as the most successfully designed "individualizing" feature. This idea was a natural, and Crosley sales have boomed as a result. During the current season the Fairbanks-Morse Conservador, a trick variation of the same feature, has again proved the worth of having something easily seen, understood, and identifiable.

Frigidaire advertising has long made use of the identifying feature idea—witness the Cold Control, the Hydrator, the Quickube Tray, and the Super Freezer. Norge has done a good job of selling the "Rollator" (rotary compressor) against all the inherent difficulties of interesting the general public—and especially women—in a mechanical principle.

In tackling the refrigerant as a feature, Grunow undertook about as tough a proposition to put over as one could imagine. The public in general knows little enough about mechanics, and even less about chemistry. In fact, manufacturers hesitated years before they undertook to educate the trade, let alone the consuming public, on the subject of refrigerants. But Carrene happened to be Grunow's exclusive feature, and so it was capitalized upon in the most logical fashion Mr. Grunow and his aides could devise.

It is entirely plausible to believe that Grunow advertising may even be of some value to the industry as a whole. More than once the industry has been accused, by government officials and others, of failing to do its duty to the public by informing users of electric refrigerators that there is some element of danger in the small quantity of gas confined in the mechanism. And, in spite of the marvelous record of electric refrigeration in terms of freedom from accidents, it is probably reasonable to say that the public should be warned. If somebody has to do it, undoubtedly the warning should come from the refrigeration industry itself; and Grunow is doing this job entirely at his own expense.

With several million electric refrigerators in daily service the year 'round in homes all over the country, there seems to be scant danger that the public will become unduly alarmed. It hasn't shown any tendencies in that direction so far, and there is little reason to believe that anything of the kind will ever happen. People continue to cook by gas, even though the potential danger is much, much greater from this source than from a small refrigeration system. Automobiles have taken more lives than the World War, yet we continue to drive them. Whatever the public wants, it will have; and no amount of advertising will scare people out of their wants.

From the viewpoint of the family there is the choice between the faintly possible danger ensuing from a refrigerant leak, and the daily risk of taking deteriorated and bacteria-poisoned food into the system. We have no statistics on the subject, but we'll wager that the total amount of medical service required by people who have suffered ill effects from refrigerant leaks in American homes during one year would not be sufficient to support a country doctor. Whereas, the total quantity of citrate of magnesia consumed by the American public during the same period probably exceeds the total production of all kinds of refrigerants combined.

Put briefly: Let Grunow have his say. He doesn't seem to be hurting anybody, and it is even possible he may be performing a service for the industry.

LETTERS

Association Questions Grunow Advertising

Milwaukee Association of Commerce
740 N. Second St., Milwaukee, Wis.
Publisher:

Enclosed is a page Grunow advertisement from the *Sentinel* of May 5. This is sent you at the suggestion of refrigerator distributors with whom we had a meeting this afternoon. They thought you would be interested and that you would be willing to give us the benefit of any comments, suggestions, or data which would assist in giving us a thorough understanding of the situation as indicated.

Milwaukee Better Business Bureau, Inc.
GEOFFREY WILLOUGHBY,
Manager.

Answer: See editorial on this page.

Mail Order Sales

Motor Power Equipment Co.
Ford Road and River Blvd.
St. Paul, Minn.

Editor:

On page 2 of the April 10 issue, you show total sales of household refrigerators by 14 companies during the month of February by size and capacity, and in the article in connection with this information, you advise that included in these figures were the totals for Universal and Sunbeam who manufacture for Montgomery Ward and Sears Roebuck.

Would it be possible for you to give us the total less the amounts listed by these manufacturers. In other words, we are seeking information as to the number of boxes being sold by other than the mail order houses by models, and this would be of value to us if the two manufacturers who make boxes for the mail order houses could be eliminated from these figures.

If it is possible to give us this information covering the period from January 1 to either March 31 or April 30, it would be still of more value to us.

F. M. HUTCHINSON,
Department Manager.

Answer: The sales figures to which you refer were released by the Refrigeration Division of the National Electrical Manufacturers Association (Nema). Individual company sales are not released, and we receive only totals as shown on the monthly Nema reports.

'What's Wrong with You All'

Iron City, Ga.

Editor:

A few days ago I sent you 25 cents for four issues of your publication and since that time a friend of mine, Mr. G. H. Johnson or J. W. Haley of Ashburn, Ga., informed me that they were having you all to send me copies of *ELECTRIC REFRIGERATION NEWS*, and today I received exactly the same copies that you all sent me last week. What is wrong with you all? I hope you don't think I need two (2) copies of each.

W. A. GEER.

Who Leads?

The Powers Hardware
Webster City, Iowa

Editor:

Kindly advise us as to who is the largest manufacturer of electrical refrigeration units. Also advise us who has sold the largest number in the past 10 years.

THE POWERS HARDWARE.
Answer: See below.

Standard Appliance Co.
107 First Ave., Newton, Iowa

Editor:

Would you please give me the following information. What manufacturer and firms led the field in sale of household units and their various standing from volume of sales standpoint, down to at least sixth place.

GEORGE E. MCHARG.

Answer: Since sales figures by individual manufacturers are never made public, we cannot give you the information requested.

Total monthly sales figures by manufacturers who are members of the Refrigeration Division of the National Electrical Manufacturers Association are published in *ELECTRIC REFRIGERATION NEWS*, and at the end of the year *ELECTRIC REFRIGERATION NEWS* estimates the total number of refrigerators sold by all manufacturers.

"We enclose 20 cents to pay for two extra issues of *ELECTRIC REFRIGERATION NEWS* as of March 20 covering specifications of household refrigerators. Our copy of that date was destroyed and we are very much in need of this issue. Also wish to express our appreciation of your good and helpful issues."—D. S. MORROW, Milan, Ohio.

Shyster Tactics?

56th and Chestnut
Philadelphia, Pa.

Editor:

Would it be possible for you to give a report on the 1933 4 cu. ft. refrigerator?

The situation is this. We purchased such a box with a 6 months' guarantee from one of these refrigerator sales services. When the box came home it gave only partial refrigeration in that no matter how long or how high the cold-dial was set we never got ice cubes in the last four rows of cubes, that is, the first four rows. Nor did the freezing unit accumulate ice as is normal.

We sent for their service man and he said the trouble was in the expansion valve and, while he could fix it in about three hours time, the wisest policy was to turn it in since there was only half a chance that the machine would last.

We went back to the dealer and he admitted too the box wasn't so good and is trying to sell us a new box. He has not been consistent in his conversations and we are a little leary of believing what he says since we have been able now to get complete refrigeration by merely turning a small screw on top of the freezing unit.

Whether all this was done intentionally to get us to buy a new box I do not know but it begins to look that way. I know too a new box is always the best buy, but we are not in a position to afford it. Several sources have told us the 1933 was a poor box.

What I am anxious to know is, should we keep the box. Is there any reason why it wouldn't give good service. Or should we ask to have the money we paid held on credit. I fear we cannot get it back. The motor in this box is in the bottom. This is rather involved but I should certainly appreciate your impartial opinion.

MRS. WILLY WINKLE.

'Caught in the Act'

College of Engineering
Department of Mechanical Engineering
University of Illinois
Urbana, Ill.

Editor:

I received your letter of April 30 enclosing the five snapshots of the lantern slides taken while I was talking to the Detroit chapters of the A.S.H.V.E. and the A.S.R.E. It is the first time that I have ever been "caught in the act," and find the pictures very interesting. They are also very clear.

I wish to thank you for sending them to me, and to say that we will be glad to cooperate with you whenever it is possible for us to do so.

A. P. KRATZ,
Research Professor.

Frigidaire Advantages

Oneonta Department Store, Inc.
155-165 Main St., Oneonta, N. Y.

Editor:

Will you kindly send us copy of the *News*, as issued early in the year, containing the discussion of the advantages of the Frigidaire.

J. H. BRANNIGAN.

Answer: We have published numerous advertisements of Frigidaire Corp. and much news of Frigidaire activities, but we do not recall a specific article which fits your description.

Lost Without It

27 Warren St., Glens Falls, N. Y.

Editor:

We have not received the *ELECTRIC REFRIGERATION NEWS* since March 6. What is the reason? Has our subscription run out?

Please let me know at once and also please send the *ELECTRIC REFRIGERATION NEWS* as we cannot get along without it.

My salesman and myself have been lost without it, so please send it on.

HARRY SILVERMAN.

Brooklyn Got It

Specialty Service Corp.
651 Atlantic Ave., Brooklyn, N. Y.

Editor:

Thanks for the article in the May 1 issue of *ELECTRIC REFRIGERATION NEWS* in regard to the Chil-Chest.

Also appreciate the write-up regarding the Carrier installation in the George W. Loft Market, New Rochelle. However, you state this was sold by Specialty Service Corp., New Rochelle. This is not so; it was sold by Specialty Service Corp., Brooklyn, N. Y.

JULIEN LOEB,
President.

"We are proud subscribers for *ELECTRIC REFRIGERATION NEWS*. We also have your 1934 *REFRIGERATION DIRECTORY*. Would like the 1935."—Wm. J. Hayes, Lefferts' Radio & Auto Supply Co., 124-18 Liberty Ave., Richmond Hill, N. Y.

"Keep up the good work. The service articles are a great help."—Frank D. Kite, 2088 Atwood Ave., Madison, Wis.

"I am a new subscriber and like the *News* very much."—Wm. Wright, 618 Lincoln St., Fresno, Calif.

Sales Idea for the Week

By V. E. Vining, Manager of Department Store Sales, Westinghouse Electric & Mfg. Co.

When I was a kid in Celina, Ohio, I worked in a clothing store. BRETZ & MEYER—a pair of "gallusses" (suspenders to you) with each suit of clothes.

I was in charge of the Cuspidor Maintenance Division.

Nineteen BIG BRASS ONES and a little individual one for the back office did their share to prove—"They also serve who only stand and wait."

I "abluted" and supervised the toilet of those babies for weeks before I noticed that—

The bright shiny ones in the center of the aisle, who exposed themselves and looked like they enjoyed their work—got most of the business.

The ones that sulked in out-of-the-way places and hid their faces in shame at their lowly mission in life grew duller each day. They were polished only once a week.

Mr. Bretz drew the parallel for me.

"Son," says he, "If you want to sell things, expose yourself and beam enthusiasm—shine."

It is hard to say "NO" to a bald-headed fat man with a smile in his eyes.

Associated Gas & Electric Sets Quota of 26,840 Refrigerators in 7-Weeks Drive

NEW YORK CITY—With the sale of 26,840 gas and electric refrigerators as their goal, companies affiliated with the Associated Gas & Electric System in 26 states, one territory, and three Canadian provinces began Monday a seven weeks' drive to realize 50 per cent of their year's quota of 53,683 units.

Known as the Sixth Refrigeration Jubilee, the drive has as its objective the sale of 25,220 electric and 1,620 gas refrigerators in the period between May 13 and June 29.

To secure maximum sales, and a consequent greater power load, the company is offering terms as low as \$2 down and 48 months to pay during the course of the campaign. These terms apply to all refrigerators up to and including 4 cu. ft. capacity. On other models, the terms are \$10 down and 36 months to pay.

Emphasize Cash Sales

Emphasis is being placed, however, on cash and short term sales, as well as financing by banks through the Federal Housing Program.

Salesmen are offered a bonus of \$2 for obtaining a cash sale or financing under the FHA; \$1 for reducing terms to 12 months, where the contract calls for 18 months or longer; \$1 for obtaining a down payment of \$25 where the terms call for less than \$25; and \$1 for obtaining a \$50 down payment where the terms call for less than this amount.

During the Jubilee drive, special attention will be given to developing the use of electric and gas refrigerators in the homes of the low-use customer, thus changing non-profit customers to profitable ones, from a company standpoint.

Savings Will Be Stressed

With about 50 per cent of the Associated domestic electric customers using 30 kwh. or less per month, and a similar proportion in the gas division, salesmen are being urged to stress the savings possible by preventing food spoilage and permitting quantity buying, as well as the convenience of purchasing a refrigerator under the company's budget plan.

They emphasize the fact that the campaign is primarily one to build a greater power load, each group, district, and salesman is being given a 200 ft. "stack" to build. Every 1 per cent of quota obtained builds the stack 2 ft. higher. Where the quota is exceeded, the stacks will be built proportionately higher than 200 ft. "Construction charts" will show, in terms of stack-height, the relation of salesmen, groups, and districts to each other in the campaign, sales of refrigerator units being translated into footage added to the stacks.

'Construction' Quotas

Leaders and "construction" quotas for the System's various load-building stacks are:

Binghamton—O. Titus, general contractor, C. R. Rudy, construction superintendent, 2,650 electric refrigerators, 5 gas refrigerators; Eastern New York—J. R. Ramsey, contractor, W. G. Rhodes, superintendent, 886 electric, 15 gas; Elmira—F. H. Hill, contractor, T. S. Craig, superintendent, 1,505 electric, 28 gas; Geneva—H. O. Palmer, contractor, H. L. Coleman, superintendent, 1,400 electric, 125 gas. Lancaster-Lockport—P. R. Chambers, contractor, W. A. Doran, superintendent, 1,000 electric, 25 gas; Rochester—H. Russell, contractor, F. M. Houston, superintendent, 4,000 electric, 100 gas; New England—F. H. Golding, contractor, W. G. Keay and R. J. Rutherford, superintendents, 2,625 electric, 584 gas; Patchogue—E. E. Hawkins, contractor; G. J. Clute,

superintendent, 223 electric, no gas.

Staten Island—F. D. Campbell, contractor, W. G. Burrill, superintendent, 1,591 electric, no gas; Florida—M. Cary, contractor, H. R. Cloud, superintendent, 322 electric, 52 gas; K-T-I-M—H. D. Fitch, contractor, M. McKinney, superintendent, 1,050 electric, no gas; Louisiana—H. R. Bodemuller, contractor, J. R. Gaugler, superintendent, 105 electric, no gas.

South Carolina—N. H. Coit, contractor, E. Leier, superintendent, 403 electric, 35 gas; Electric & Gas Utility—H. V. Armstrong, contractor, E. C. Weston, superintendent, 226 electric, 567 gas; Metro. Edison—N. J.—E. H. Werner, contractor, F. S. Hoefler, superintendent, 4,500 electric, 50 gas; Northwestern Pa.—L. H. McCray, contractor, L. A. Clavin, superintendent, 1,438 electric, no gas; Southwestern Pa.—P. H. Harris, contractor, J. R. English and E. F. Kloeber, superintendents, 1,296 electric, 34 gas.

Prizes for Salesmen

At the close of the drive June 29, prizes will be awarded to the salesman who builds the highest "stack," the salesman who builds the second highest, the supervisor whose crew builds the highest stack, and the supervisor whose sales crew builds the highest stack in each district.

"Construction" team crews, under the employees business building plan, who establish outstanding records, will be awarded prizes as follows:

A prize to the team crew in each division which is first to build its "stack" to its scheduled height, and an additional bonus for extra height after quota height has been reached. Every team crew will have an opportunity of winning these additional awards.

Awards for Sales Leads

Company employees will be given bonus and point awards for every name they turn in that is converted into a sale. In addition, employees will have the opportunity of taking advantage of special discounts and terms offered on any electric or gas refrigerator they wish to place in their homes during the Jubilee. Point awards are made to employees on refrigerators purchased for their own use.

Branches of the System in the various states are being urged to tie in their local advertising campaigns with the campaigns of manufacturers now appearing in national magazines. A series of advertisements, prepared by Daniel Starch & Staff, is being made available to the various properties of the company.

Window Displays

A series of attractive window displays is also being advocated during the campaign, as well as an extensive campaign of direct-mail literature to increase prospect interest and promote sales.

As a send-off, special open house parties or previews are being planned in various cities, with an advance program of sales promotion that will insure community-wide attendance. Samples of phone invitations and letters are being given dealers, to furnish an abundance of live prospects for immediate follow-up purposes.

Branches which have home economics departments are being urged to have these cooperate with special cooking and hostess schools and home demonstrations, to bring the advantages of mechanical refrigeration to the housewife's attention.

Refrigerator replacements are being stressed as an important factor in 1935 sales. In this respect, the System's bulletin states:

"It is estimated that nearly 20 per

cent of the automatic refrigeration sales during 1935 will be due to replacements by reason of obsolescence or desire for larger refrigerators. Where a serviceable refrigerator is replaced, the opportunity is offered to find a market for this type of box in the homes of the low-use customer.

"That automatic refrigeration is entering on the vast and profitable replacement phase, in addition to the unsaturated market which still remains, is generally recognized. In gas territory with electric competition, there is an excellent opportunity for gas refrigeration to capitalize on this replacement market . . .

"Experts believe that the next 10 years will bring a 50 per cent national saturation, so gas and electric sales organizations have an immediate virgin territory for some 4,000,000 refrigerators."

Attention is also called to a recent survey by the Philadelphia Gas Works Co. on replacement of electric refrigerators by gas refrigerators, in which it was found that 83 per cent of the mechanical units removed had been in service for not more than five years, and that nearly 45 per cent were less than two years old.

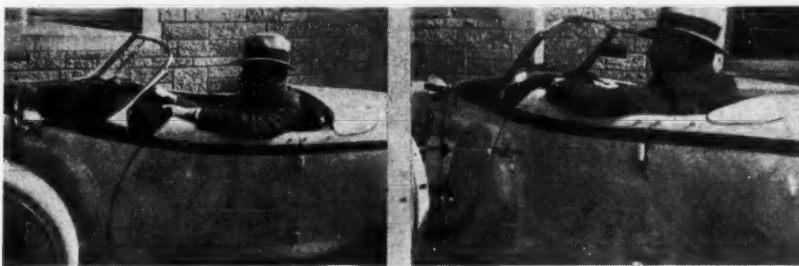
Reasons for Replacement

Seventy-two per cent of the refrigerators replaced, the report is quoted as stating, had been made by companies which are either out of business or are inconspicuous factors in the industry.

Reasons for replacement of electric refrigerators by gas units in the Philadelphia territory, according to the report, were: "unsatisfactory performance," 19 per cent; "worn out mechanism," 18 per cent; "too noisy," 15 per cent; "high servicing costs," 15 per cent; and "high operating costs," 13 per cent.

The American Gas Association's "Prosperity Cup" contest is cited as an excellent means of promoting the sale of gas refrigerators, as well as an

Author of Sales Idea for the Week



V. E. Vining, manager of department store sales for Westinghouse, takes an Auburn speedster out for a canter.

opportunity for the System's gas division to gain national recognition and special awards for its retail salesmen.

Reports in the sales drive are to be made every Wednesday and Saturday during the campaign to T. W. Moffat, vice president of the Utility Management Corp., with the final report deadline July 15. Installed sales only will count toward results, but installments will be counted up to July 13. Milk cooling sales will also be counted, as will dealer sales.

Wheeling Crosley Dealers Sponsor Broadcast

WHEELING, W. Va.—Twice weekly the "Shelvadorians" broadcast over station WVVA here, the program being jointly sponsored by the Ott-Heiskell Co., Crosley distributor of this city, and 10 Crosley Shelvador dealers, who share the costs mutually.

The current series of broadcasts mark the third season in which the Shelvadorians have broadcast over this station.

The programs are held through the active selling season of the year.

5-Reel Movie Produced For General Electric

HOLLYWOOD, Calif.—General Electric Co. has completed a five-reel domestic comedy feature at the Mascot studios, with the action staged in and around various electrical home appliances manufactured and marketed by the company.

During its five reels, the picture carries only one brief flash of the G-E trademark.

The picture will probably be sent to zone distributors and dealers to offer exhibitors on a free booking basis, with advertising and exploitation co-operation for company representatives. In addition to the regular 35 mm. prints for theater showings, General Electric will have the film reduced to 16 mm.

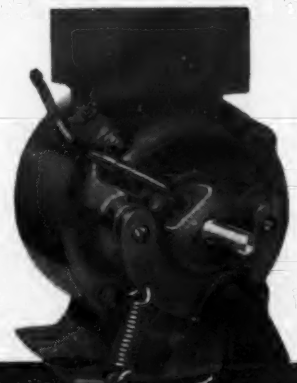
The feature was produced by X. F. Sutton, Monte Brice directing. Cast includes John Mack Brown, Sheila Manners, Hedda Hopper, Roy D'Arcy, William Collier, Bert Roach, T. Roy Barnes, Mildred Harris, and Inez Courtney.

ALL
DELCO MOTORS
HAVE *Accurately*
Machined PARTS

• Concentricity of the revolving and stationary parts of an electric motor is necessary if good performance is to result. To accomplish this essential requirement, all machining must be accurate. In Delco motors, required tolerances are assured by new and better methods of manufacturing developed by Delco engineers. In fact, Delco engineers have made significant improvements in almost every production operation—one important reason why Delco motors are so quiet and so reliable in performance.

DELCO PRODUCTS
CORPORATION
DAYTON, OHIO

Made in Canada by the McKinnon Industries, Ltd., St. Catharines, Ont.



DELCO MOTORS

ENGINEERING

Westinghouse Units Checked by Two Types of Tests

By George Coyle, Supervisor of Test Equipment,
Westinghouse Electric & Mfg. Co., East Springfield, Mass.

TO guarantee satisfactory operation in the field the Westinghouse refrigerator goes through a series of exhaustive tests designed to test the performance of the icing unit and the economy of that performance. The compressor, consisting of motor frame, rotor, shaft, cylinder, and piston, is first tested. Because of the very close tolerances (.0002 in.) held on parts, and also due to the fact that selective assembly is used on these parts, the compressor does not require any preliminary "running in" or "wearing in," but goes directly to compressor test for a very critical test which eliminates transmission of noise and duplicates the permanent mounting in service.

As no stator has been pressed into the motor frame up to this point, the compressor is driven through a flexible coupling by a constant speed resilient mounted motor.

Pumping Time Measured

The pumping time, or the ability of the unit to refrigerate is measured with the unit pumping against 100 pounds per square inch of head pressure. The vacuum that the pump will pull is also measured with the discharge pressure at 100 pounds per square inch, which gives a very good indication of the valve action.

The volumetric efficiency of the pump is measured with a "Rotameter," a tapered tube in which a light rotating "top" floats on the stream of air, making an absolute frictionless meter and giving very consistent results.

The Rotameter is very sensitive to changes in flow and shows up any erratic action on the part of the pump or valves. One second below the limit for pumping time disqualifies a unit, and it has to go back for re-assembly and re-test.

Noise and Torque Tests

The compressor is washed and dried, after which the stator, previously stored in a paper bag, is pressed in, and the unloader is assembled. The unit is now ready for another noise test and for a torque test.

Also, friction is again checked to see that the pressing in of the stator has not disturbed the line-up in any way. The compressor is coupled up to a dynamometer where starting torque and current, breakdown or maximum pulling torque are measured, friction and windage again read. The air gap is also checked with a feeler gauge, the unloader and unit have to pass a noise test, as well as a high voltage insulation test.

Then the compressor is pressed into its shell and sealed. The icing unit assembly follows, at which all joints, welded and silver-soldered, are tested with 200 pounds per square inch of air. The unit is then dried for 12 hours in an oven heater over 125° C. and in which air is used that does not show a dew point until the tempera-

ture has dropped from 60° to -70° F. After being taken from the oven, the unit is evacuated to almost a perfect vacuum and then charged with oil and refrigerant.

Six-Hour Moisture Test

The unit is then run for six hours and a moisture test is taken to be sure that the unit, refrigerant, and oil are not contaminated with moisture, which would cause corrosion of valves and bearings. The amount of moisture allowed (weight of moisture divided by weight of refrigerant) is .006 per cent, which limit precludes any possibility of corrosion or decomposition of the refrigerant in the unit.

Now the icing unit is ready for its final performance test. Each unit is mounted with the evaporator or froster enclosed in an insulated cabinet designed to duplicate heat leakage of an actual refrigerator cabinet. The unit is then run into a heater room which is kept at a temperature of 100 to 110° F., and the ability of the unit to start on under- and over-voltage is tested. The unit is then run eight hours at No. 1, the coldest position of the control.

This first run shows up any condition of over and under charge and general running condition. The unit is then connected to a recording vacuum and pressure gauge.

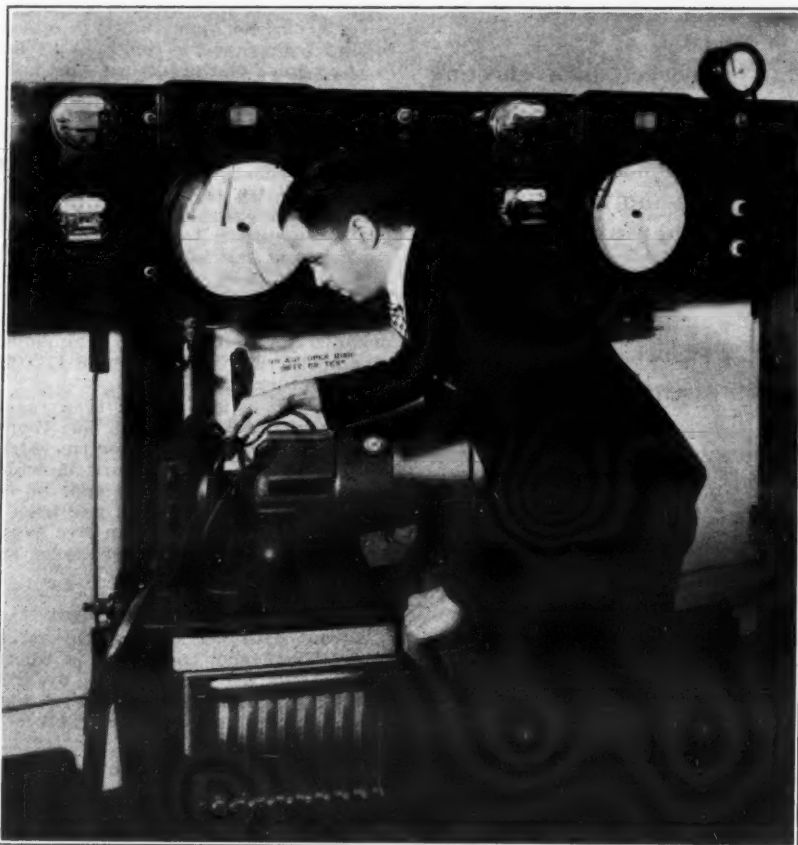
Unit & Control Operation Charted

A complete graphic record of both the unit and its control is shown on the chart. The various positions of the control are used, and the chart shows the actual time required to pull down to a definite suction pressure and temperature. The watts input is also measured at this point, as well as the head pressure and the operation of the unloader.

This gives a complete record of each unit, how much it will cost to run, how long it takes to pull down to temperature, and in every way duplicates the most severe conditions in service. Each unit, before receiving approval on this test, has to have its chart analyzed and signed by a tester. The chart is filed away for reference.

After the performance test, the unit goes through a final noise test and insulation test, each unit being compared with a standard unit for noise. The unit is then sealed off, painted, and a final test of all joints is made by placing each unit under a glass hood into which anhydrous ammonia

Inspection of Units from Stock



One of the tests given to Westinghouse household refrigerating units consists of a selection of units (which have already been given a complete test) from stock. The units are first inspected by a joint committee of representatives from the inspection and test, engineering, and manufacturing departments.

gas is injected, surrounding the unit, and showing up any leaks of refrigerant by a white vapor.

Finally, the freezing trays and instructions are supplied with each unit and a rigid final inspection is made after which the unit is shipped.

Selection of Stock Units for Test

To further safeguard the purchaser, and to make doubly sure that the refrigerator will perform under the most severe conditions of service that might be encountered, a complete test panel has been erected in the 100° F. performance test room to analyze units already passed through the regular performance test and placed in stock.

Twenty units per week are given a complete test in cabinets. These units are drawn from stock; uncrated before a joint committee consisting of representatives from the inspection and test, engineering, and manufacturing departments.

The unit and accessories, ice trays, etc. are thoroughly inspected and then the unit is placed into a cabinet which is built into an alcove with the three sides and top of the alcove enclosing the cabinet, thus duplicating the severe operating conditions of a cabinet placed in a three-sided alcove with the consequent poor ventilation resulting from such an installation.

Alcoves used on this test are standing in an average ambient temperature of 100° F.

Instrument Panel Provided

The test panel, on which the electrical meters and recording gauges are mounted, is immediately in front of the cabinets (see photo). Outlets and meters are provided for testing 10 units at a time. The complete test on each unit and cabinet takes approximately 2½ days or 56 hours.

During the test, each unit has the following meters and gauges connected to it:

- Integrating watt hour meter to show the total power consumption of the unit during the test.
- Hour meter, or time recorded which shows exact amount of time the unit has been running. Both the watt hour meter and the hour meter have geared up ratios to enable more accurate reading of watt hours and total running time.
- Recording thermometer, the bulb of which is located in the cabinet.
- Recording pressure gauge which is connected to show head pressure on the unit during the entire test.

Operation at Varying Voltages

Current relays and signal lights are at each position to indicate operation of the refrigerator control at low and high voltages; 95 and 135 volts being supplied to the panel to duplicate voltage fluctuations which might be encountered in actual service.

In addition to above for each individual unit, a portable wattmeter and voltmeter are used to read the instantaneous volt and watt input to each unit. Also, three ambient temperature recorders keep a continuous record of the room temperature around the alcoves.

The testers operating this "super-test" are chosen from men who have had at least three years experience on refrigerator testing, and two men work together so that each unit is under the close observation of an experienced man all the time.

Whitman Talks to Chemists on Heat Diffusion Problems

NEW YORK CITY—Chemical engineering problems connected with heat transfer and with the transfer of material from one phase to another were discussed last Friday by Professor Walter G. Whitman of the Massachusetts Institute of Technology at a joint meeting here of the Society of Chemical Engineers with the New York sections of the American Chemical Society, the Electrochemical Society and the Societe de Chimie Industrielle.

The meeting was held at the Chemists' Club, 52 East 41st St., New York, and was preceded by a dinner.

Prof. Whitman's paper was entitled "Diffusional Processes." The transfer of material and of heat from one phase to another, said Prof. Whitman, is largely a problem of diffusion through films at the fluid boundaries. Recent work has demonstrated, however, that mixing by turbulence within the main body of fluid is seldom so complete that non-uniformities can be disregarded.

He cited numerous examples of transfer problems which are dominant in the practical operations of chemical industry. He showed that apparently diverse phenomena could be correlated by simple generalizations and emphasized the value of such correlations in the work of the chemist and chemical engineer.

Prof. Whitman was formerly associate director of research of the Standard Oil Co. of Indiana. Last fall he was appointed head of the department of chemical engineering at the Massachusetts Institute of Technology. His outstanding scientific contributions have been in the fields of corrosion and the absorption of gases by liquids.

His developments have contributed to increased efficiency in operation in various industries such as the recovery of gasoline from natural gas, the manufacture of liquid carbon dioxide and dry ice and the production of refrigerants for household use.

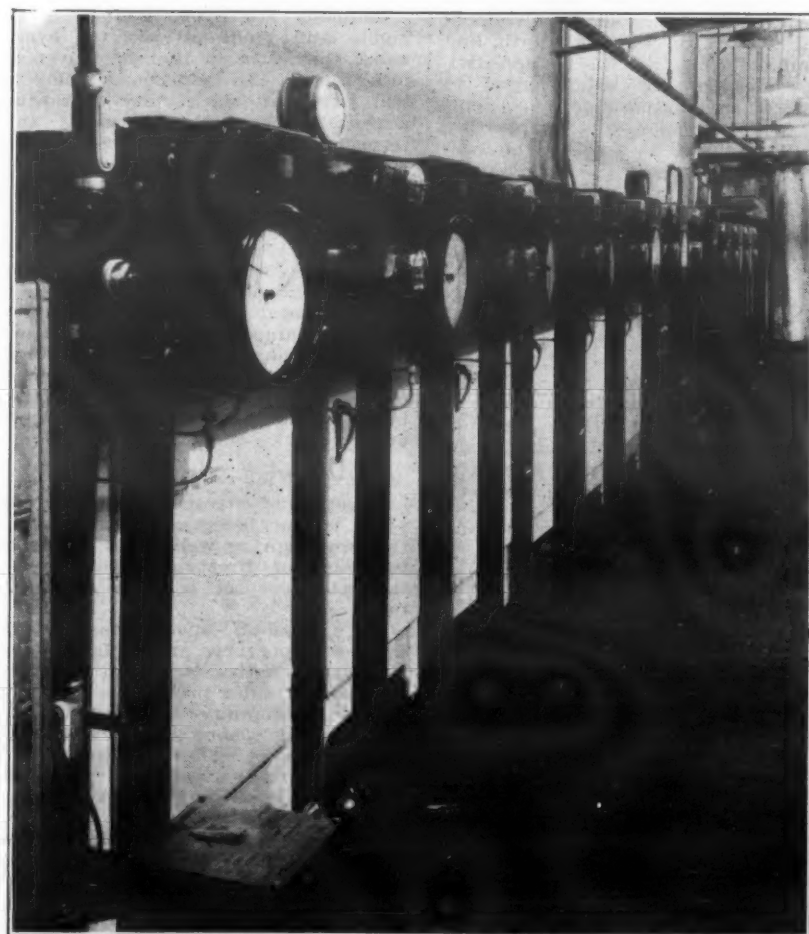
York Engineer to Address Boiler Engineers

CHICAGO—L. S. Morse, executive engineer of the York Ice Machinery Corp., is to speak before the tenth annual meeting of the National Board of Boiler & Pressure Vessel Inspectors, Wednesday, May 15, in the Stevens hotel here, on the subject "Protective Methods of Minimizing Hazards in the Operation of Refrigerating Systems."

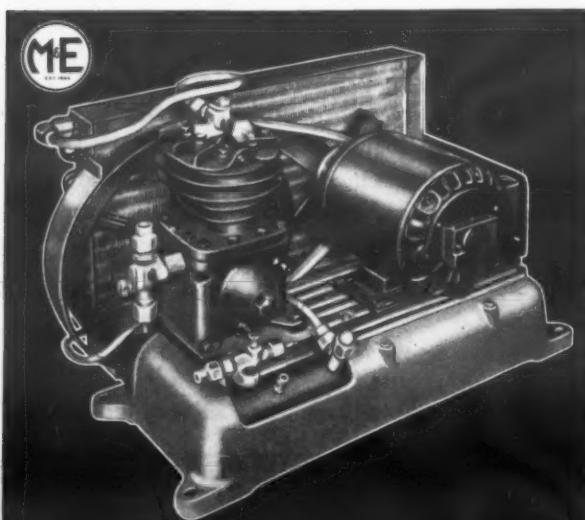
This organization is composed of city and state chief safety inspectors from all over the country who convene each year to hear prominent engineers discuss safety practices.

In connection with the meeting, insurance companies have arranged an exhibit to show the approved methods of detecting and correcting conditions leading to accidents.

'Quality Test' Equipment



Units selected from stock, after being inspected by the joint committee, are placed on tests in three-sided alcoves kept at 100° F., and are run through a series of tests which are recorded on the test instrument panels shown here.



QUALITY Versus MASS

NINE YEARS of usage by leading equipment manufacturers have given conclusive evidence that "M&E" Compressors—made by quality rather than mass methods—render superior performance under all conditions.

Doesn't Your Equipment Deserve the Best?

1/6 to
10 h.p.

Air Cooled
Water Cooled
Air and
Water Cooled

Complete Line of
**BARE
COMPRESSORS**
for service
companies and
assemblers.

Catalogs
on Request

MERCHANT & EVANS CO.
Manufacturers
Established 1866

Main Offices —
Showrooms
PHILADELPHIA, PA.
Plant:
LANCASTER, PA.

Automatic Products Designs Valve for Freon and Methyl

MILWAUKEE—Recently introduced by Automatic Products Co., after two years of field tests, is a new thermostatic expansion valve designed for use with Freon and methyl chloride on air-conditioning and commercial refrigeration systems.

Claimed for the new valve is construction with a minimum of parts, accurate maintenance of the desired superheat value, and operation free of friction.

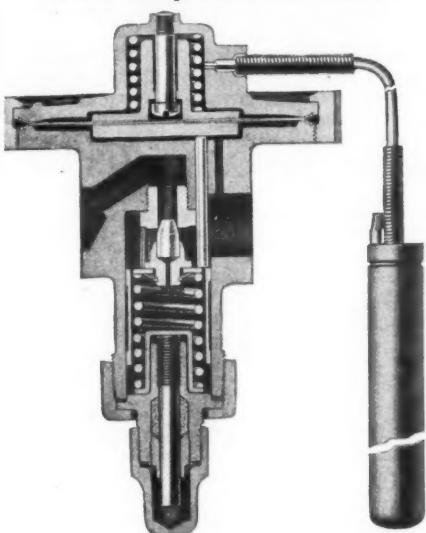
As the pressure difference between the power element and the evaporator inlet increases (corresponding with increase in superheat above the value incident to the evaporator temperature), a double diaphragm forces the needle valve open. As this pressure difference is reduced, a spring reduces the valve opening.

Allows Only 1° Variation

According to Automatic Products Co. engineers, actual operating tests show that the model 220 thermostatic expansion valve permits less than 1° F. variation in superheat for a given evaporator pressure.

The valve has a superheat range adjustable between 3° and 18° F. This not only offers additional assurance

New Expansion Valve



Cross-section view of Automatic Products valve showing various component parts.

against flooding back of the liquid at the start of a cycle, but also limits the power needed at the compressor motor when the evaporator temperature is high.

All body parts of the model 220 expansion valve are brass forgings. Valve seat is of stainless steel, and the needle is of Stellite, both accurately ground.

All working parts can be readily removed by loosening a large hexagonal nut at the lower end.

Adjustment of Valve

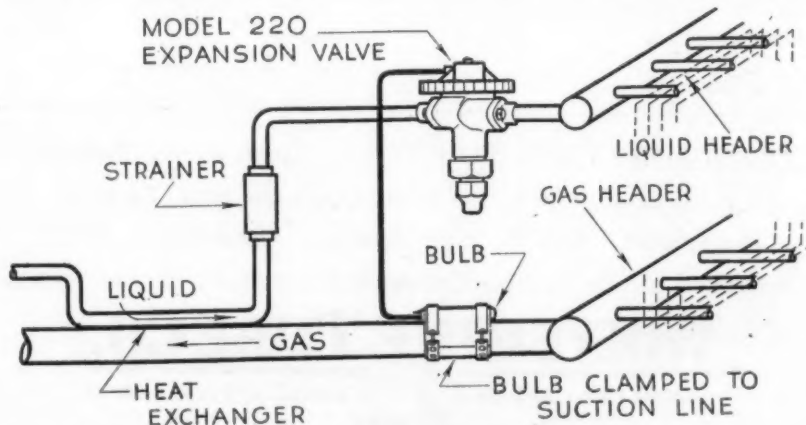
Adjustment is accomplished by removing the acorn sealing nut at the bottom of the valve, giving access to the adjusting stem. The body is of flange construction. Gaskets are furnished with flanges.

One of the principal features of this new Automatic Products valve is that the body can be placed in an ambient temperature higher or lower than the bulb temperature. The thermostatic bulb can be installed in any position on the suction line. Clamps are furnished for this purpose.

The valve can be installed in any position; that is, the power element can be on the top, bottom, or side. It should be placed close to the liquid header.

The model 220 expansion valve is available in three capacities: 4, 6, and 10 tons for Freon and 8, 12, and 20 tons for methyl chloride. The corresponding orifice sizes for these three models are .200 in., .250 in., and .375 in.

New Valve on Air-Conditioning Job



A typical installation of Automatic Products new thermostatic expansion valve as generally used on air-conditioning systems.

Makers of Insulation Dispel Worries about Termite Problem

By Phil B. Redeker

"DO termites attack the lining or insulation of household electric refrigerators?" That was a question recently asked by a reader of ELECTRIC REFRIGERATION NEWS.

Research and inquiry suggest an answer which may be summed up as follows:

Termites have been known to attack the insulation in household electric refrigerators. However, dealers and users need not fear that the refrigerators in their stockroom or home will be "eaten up" by termites because insulation in current models is either treated in such a way that it won't be attacked by termites or is of material that doesn't furnish a meal for this insect.

No Need to Worry

In addition, it is improbable that termites, even if they got inside of a stockroom or home, would get around to attacking a refrigerator (with all the other wood around) before they were detected.

However, despite this assurance, the termite problem in general is becoming more acute every day, declares C. L. Neumeister, research engineer of the Celotex Co.

Termites are responsible for millions of dollars of damage annually to lumber and other materials of cellulosic origin, says Mr. Neumeister. Formerly, it was the general opinion that termites were pretty well restricted to the warmer climates, but in recent years they have extended their activities to such an extent that they have been reported from practically every state in the Union.

Fifty-three species of termites native to the United States have already been identified, and only two species of foreign origin are known to exist in this country, both of the latter being as yet confined to restricted areas of only a few square miles.

Termites belong to the oldest family of insects, being related to cockroaches. In fact, fossil termites of the same genus to which the species belong that are now doing damage in the United States have been found in geological deposits that are known to be many millions of years old.

In the economy of nature the function of termites is to break down and restore the cellulose of dead wood to the soil and the air, in a form that makes it again available as plant food, thus completing the cycle of tree growth.

Under natural conditions they have confined their operations to the forests, because it was only here that their natural food, dead wood, could be obtained.

Under the more artificial conditions of society and industry, however, man has used the products of the forest to erect homes, factories, fences, bridges, etc.

Invade Cities

As a result of this enterprise, vast stores of the natural food of termites are found in the wooden buildings and other structures that are grouped in cities, and farms. At the same time, definite and easily followed highways have been provided for their migration, through the construction of telegraph, telephone, and power lines, as well as fences.

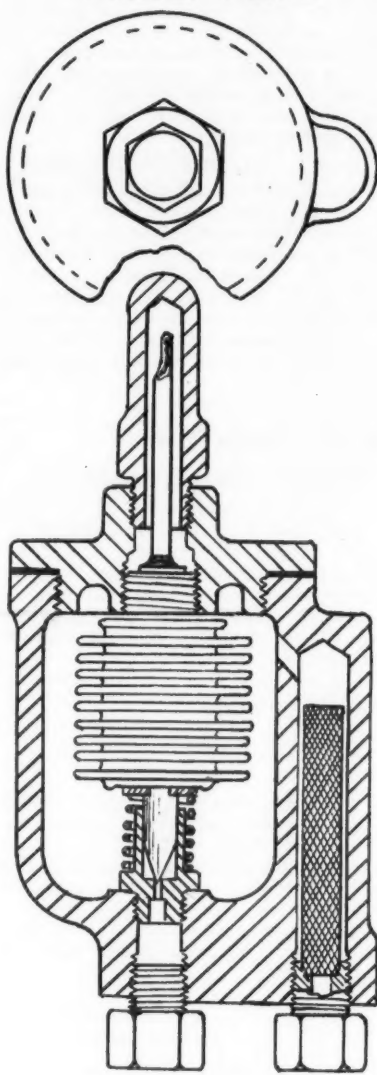
Termites have not been slow to seize upon the opportunity afforded to facilitate migration, the number of their colonies has increased to an astonishing rate, and many new centers of infestation have developed.

Termites fall into two types—wood-dwelling termites, and earth-dwelling or subterranean termites, although a few of the latter are partly subterranean and partly wood-dwelling.

As their name implies, wood-dwelling termites found their colonies and live in the wood itself. This type is subdivided into dry-wood termites and damp-wood termites.

Subterranean termites establish their colonies in the earth and feed

Prestat Valve



Cross-section drawing of Prestat valve, introduced by National Refrigeration Corp.

upon wood that is in the ground or in contact with it. Failing a supply that can be reached directly, they erect covered runways or tubes to connect their underground galleries with the food supply. This type requires a constant supply of moisture which it obtains normally from the ground.

This characteristic is in marked contrast with the dry-wood termites, which are able to thrive in wood containing less than 12 per cent of moisture, a content too low to give fungi and other decay-producing organisms a foothold.

Attack by subterranean termites is said to be impossible except through some contact with the ground, but that on the other hand, dry-wood termites enter structures above the ground, often through the roofs or at the eaves of buildings. A damaged place or nail hole in the weatherboarding affords an excellent opportunity for entrance.

Termites live in colonies made up of different castes. Not only are the termites social, but each colony lives shut off from communication with the outside world and from other colonies.

All castes except the soldier, have jaws adapted to cutting off little fragments of wood. There is much that is not understood about their methods of digesting and using cellulose as a food source.

Ferox Process in Celotex

According to Research Engineer Neumeister, Celotex Co., cane fibre products are protected against termite attacks by the Celotex patented Ferox process.

The Ferox process is a method whereby the individual fibres, in their wet state and before formation into a board, are coated with a chemical complex which is toxic to fungi, termites and other cellulose destroying organisms.

This chemical complex is said to be insoluble in water, non-volatile, odorless, permanent, and in no way alters the physical properties or utility of the finished products.

Dry-Zero Repels Them

Harvey Lindsay, president of Dry-Zero Corp., states that it appears that what the termite lives on or digests is not the cellulose undigested but rather, the hardened gums, oils, and other constituents of the wood. This has been tested, he declares, by putting a colony in pure cellulose of any form, in which case the colony dies out.

Mr. Lindsay says experiments of this type were tried some years ago with Dry-Zero insulation, which is pure natural cellulose, and that the termites died right away.

Gibson Distributor in Los Angeles Moves

LOS ANGELES—Fey & Krause, Inc., distributor for Gibson refrigerators in this territory, moved to new quarters at 3430 South Hill street here recently.

New Prestat Valve Is Designed for Use in Flooded Systems

DAYTON—National Refrigeration Corp. here is marketing a Prestat valve, designed to be used in place of a high side float valve or with a flooded evaporator.

The Prestat valve operates on the thermostatic principle. By virtue of its construction this valve will not open until the required pressure is reached, regardless of temperature.

This is accomplished by using a bellows, within the valve, charged with a small amount of liquid which has a lower boiling point than the refrigerant used in the system. This arrangement creates the desired variation in pressure to insure condensation at all temperatures.

Liquid refrigerant from the condenser passes through a screen and surrounds the bellows within the valve body. The heat in the liquid surrounding the bellows causes the liquid within the bellows to evaporate and create a pressure which holds the needle against the seat.

This condition exists until the entire valve body is full of liquid refrigerant. When this condition is reached the temperature of the liquid refrigerant becomes constant and the temperature of the bellows becomes the same temperature as that of the liquid refrigerant.

Additional compressor pressure will then raise the needle from its seat and the liquid refrigerant discharges into the evaporator. The effect is that of maintaining a constant liquid level in the evaporator.

By using a liquid with a lower boiling point in the bellows than is used in the system, a spring can be placed under the bellows, which will force the needle off the seat and allow the refrigerant to by-pass in case the

bellows should leak. Otherwise, the needle would remain on the seat, causing a dangerous amount of pressure to build up in the high side of the system.

The Prestat valve can be installed with any flooded type evaporator and will function if placed inside the cabinet right at the evaporator when using a lower mounted condensing unit, thereby eliminating the use of a pressure equalizing valve.

However, in a basement installation, the manufacturer says it is advisable to mount the valve at the end of the condenser and to use a pressure equalizing valve at the evaporator, to prevent frosting of the liquid line.

It is necessary that the entire system be evacuated thoroughly after the valve is installed as any air will cause the needle to be raised from the seat. Where the evaporator is already charged, it is only necessary to evacuate the high side of the system together with the Prestat valve.

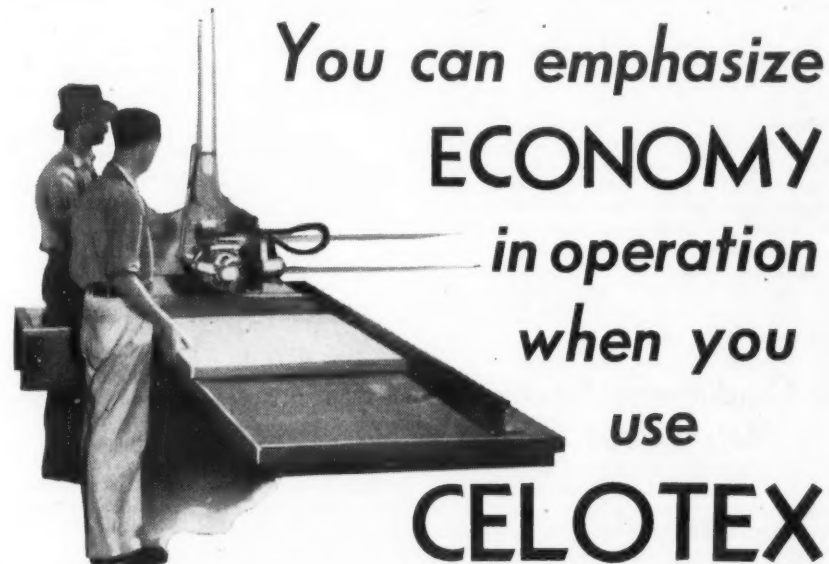
The manufacturer warns against placing the Prestat valve in a dehydrating oven as the excessive pressure created within the bellows will ruin it.

The cap should not be removed from the valve as there is no stop on the bellows. Before the cap is removed, the bellows must be discharged, otherwise the bellows will be made unfit for further use.

McDonald Mfg. Co. to Be Penn Switch Dealer

DUBUQUE, Iowa—A. Y. McDonald Mfg. Co., with main offices here, has been made distributor in the middle west for Penn Electric Switch Co.

The new distributor will carry stocks of controls for air conditioning, refrigerating, heating, pumps, and compressors. Warehouse stocks will be carried at all branches, which are Kansas City; Hutchinson, Kan.; Grand Island, Nebr.; Omaha; Minneapolis; Des Moines; and Sioux City, Iowa.



Pre-fabricating Celotex according to Specifications.

Celotex insulation gives you a sales feature worth talking about. The ultimate buyer is already acquainted with the advantages of Celotex through national advertising and widespread use. It is therefore relatively simple to demonstrate that Celotex in a refrigerator cabinet effectively retards heat penetration with consequently important savings in operation costs.

From the manufacturer's standpoint, Celotex presents many economies—it is strong but light—it is easily handled and it is available pre-fabricated with close dimension tolerances to your specifications. Celotex cuts assembly costs and reduces heat leaking joints and cracks to a minimum. Motor compartments are quieter when lined with Celotex—making another important sales feature.

The experience and results obtained from using Celotex as insulation in thousands of refrigerators prove its efficiency and economy.

We invite consultation with our refrigeration experts and offer a complete, co-operative service to manufacturers in the refrigeration field.

OTHER CELOTEX ADVANTAGES

Sterilized • Odorless • Waterproofed • Sanitary • Workable
Strong • Durable • Permanent • Economical
Adaptable to any type Cabinet

All Celotex Cane Fibre Products are Dry-Rot and Termite Proofed by the exclusive Ferox Process (patented)

THE CELOTEX COMPANY, 919 No. Michigan Ave., Chicago, Ill.

CELOTEX
BRAND
INSULATING CANE BOARD
Reg. U. S. Pat. Off.



BUILDS • INSULATES • DECORATES
SUBDUES NOISE



STATISTICS

Demands for Various Kinds of Statistical Information to Be Answered in Data Book

Polk Survey

United States Advertising Corp.
Toledo, Ohio

Editor:

Several months ago you published some figures taken from the Polk Survey analyzing the refrigerator market. The article accompanying these figures stated that Polk planned to continue this survey in all towns over 25,000 population and that additional figures would be available from time to time.

Will you please let us know if the survey has been completed in any other towns and, if so, have the figures been published in your good publication, or tell us how we can obtain copies of the results.

R. J. FALLER.

Answer: See below.

126 West 63rd St.
Kansas City, Mo.

Editor:

Enclosed find 35 cents in coin for which please send me the issues of ELECTRIC REFRIGERATION NEWS for March 20, 27, April 3 and 10 as advertised on back page of your issue of March 13, 1935, and also a copy of the issue for Sept. 19, 1934, for which I include your regular single copy price.

The material I most want in the issue of Sept. 19 is the tabulation of the relative standing of different brands of refrigerators in some 18 cities. Will you also please tell me whether you have published similar figures for any other cities recently and, if so, the dates of the issues in which they appeared. I will probably order those issues.

ALFRED J. GRAVES.

Answer: Results of the R. L. Polk Consumer Census for 22 American cities will be found in the 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK. Information given will include number of families owning household electric refrigerators, division by makes of refrigerators in use, age in years of refrigerators in use, and ownership of refrigerators by various income groups.

Air-Conditioning Surveys in Metropolitan Centers

General Electric Co.
Schenectady, N. Y.

Editor:

We are studying the extent of the market for air-conditioning equipment of various sizes and ratings and are very much interested in a recent series of tabulations and summaries on this subject which have appeared in ELECTRIC REFRIGERATION NEWS.

The article "Where Air Conditioning

Has Been Installed in Chicago," on page 10 of the Feb. 6 issue is of particular value to us since it shows the type of business, purchaser's name, tonnage, and connected horsepower of each installation.

We note that data in similar detail are given for Houston, Tex., but find only summaries given for New York, Boston, Philadelphia, and Louisville. We should like very much to obtain a detailed breakdown of the installations in these and any other cities on which you may have information, by type of establishment, tonnage, and connected horsepower. If you have these data readily available, we should greatly appreciate your sending them to us as they will be of much more value to us in our study of the market for air-conditioning units of various ratings than are the summary figures. If you do not have detailed figures for installations in New York, Boston, etc., we shall appreciate your advice on where they may be obtained.

J. K. WALKUP,
Market Research Division.

Answer: See below.

408 Livingston Hall
Columbia University, New York City

Editor:

I am a graduate student in the Columbia School of Engineering and in that capacity I am working on an economic survey of the air-conditioning industry. Mr. William B. Henderson, executive vice president of the Refrigerating Association, Washington, D. C., has advised me that complete statistical information on air conditioning and the position of the companies in the business can be secured from you.

I would deeply appreciate obtaining the above material. Please notify me if there are any charges.

ARTHUR MITCHEL.

Answer: See below.

Eavenson, Alford & Hicks
Mining Engineers
Koppers Bldg., Pittsburgh

Editor:

A few days ago I wrote Mr. T. J. Fitzgerald, chief statistician of the Division of Special Tabulations, Bureau of the Census, asking him if he could give me some information as to the amount of refrigeration installed in theaters, department stores, and office buildings, with the approximate kwh. required for the different types of apparatus.

I had this information for the years up to 1930, and Mr. Fitzgerald told me that he thought perhaps you could give me this information for the years 1931, 1932, 1933, and 1934. It will necessarily be approximate, but I am

to give a talk on coal at the American Mining Congress meeting in Cincinnati early next month, and I would like to show, if possible, the approximate number of tons of coal used per year to produce the power for this electric refrigeration, and any data that you can give me will be very much appreciated.

HOWARD N. EAVENSON.

Answer: Information covering number of air-conditioning installations and connected horsepower for 30 large cities is included in the 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK. Installations are divided according to types of establishments in which equipment was installed in years prior to 1933, during 1933, and during 1934.

Yearly Exports of Electric Refrigerators

James O. McKinsey & Co.
135 South LaSalle St., Chicago

Editor:

Would you be kind enough to give me the data on yearly exports of mechanical household refrigerators from 1920 up to date at your earliest convenience.

GEORGE E. KLEMPERER.

Answer: See below.

Batavia, Dutch East Indies

Editor:

We kindly request you to consider us as subscribers of the above publication from April 1, 1935.

Further, we would be pleased if you could supply us with the monthly figures of the export of refrigerators to the Dutch East Indies for the period Jan. 1, 1932, to March 31, 1935, together with the monthly average prices.

N. V. CARL SCHLIEPER
HANDEL-MAATSCHAPPIJ.

Answer: Exports to foreign countries and U. S. Possessions in each year since 1926 will be found in the 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK. The reports show exports to individual countries.

Sales by States

Des Moines Register & Tribune
Des Moines, Iowa

Editor:

Wire, collect, 1934 electric refrigerator sales for states of Iowa, Nebraska, and Minnesota.

MIDDLETON.

Answer: Estimated sales of household electric refrigerators by states through 1931 and in 1932, 1933, and 1934 will be found in the 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK.

Total Refrigerator Sales by Months

917 Fairfax Building, Kansas City

Editor:

In your Feb. 20 issues of ELECTRIC REFRIGERATION NEWS, you give the total sales of electric household refrigerators by months for 1934. Can you give me these same figures for 1933. I need this information to show the characteristics by months of refrigeration sales.

On page 13, you show 1934 sales by months throughout the world. Do you have the same figures by months for domestic sales for the years 1933 and 1934. If you have, I would appreciate receiving same.

A. HARDGRAVE.

Answer: Included in the 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK is a tabulation showing estimated sales of household electric refrigerators in the United States by months for the years 1930 through 1934. This table also shows exports reported for each month of these years.

Real Property Inventory For 64 U.S. Cities

C. I. T. Corp.

1 Park Ave., New York City

Editor:

Should vastly appreciate your wiring immediately, collect, any late figures you have available to show percentage of persons owning own homes out of total persons purchasing electric refrigerators. In order to be really indicative, preferable exclude from total those refrigerators sold for installation in apartment houses. Presume you cannot tell me percentage home owners out of total installations financed as well as out of total installations made. Thanks.

S. D. MADDOCK,
Vice President.

Answer: The Real Property Inventory in 64 cities made by the U. S. Department of Commerce during 1934 gives the number of owner-occupied and rented dwelling units owning mechanical refrigerators in the various geographic sections of the country. This survey also shows percentage of homes owning mechanical refrigerators in 64 representative American cities. Returns from the Real Property Inventory will be found in the 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK.

194,252 Refrigerators Sold in March By 14 Manufacturers

The following 14 member companies of the Refrigeration Division of the National Electrical Manufacturers Association (Nema) reported sales for March, 1935, and household inventories for January and February: Apex Elec. & Mfg. Co., Crosley Radio Corp., Frigidaire Corp., General Electric Co., Gibson Electric Refrigerator Corp., Kelvinator Corp., Leonard Refrigerator Co., Norge Corp., Servel, Inc., Stewart-Warner Corp., Sunbeam Electric Mfg. Co., Uniflow Mfg. Co., Universal Cooler Corp., and Westinghouse

Electric & Mfg. Co. Member companies not reporting included: Jomoco, Inc., Merchant & Evans Co., and Sparks-Withington Co. The sales of the reporting companies do, however, include units manufactured for the following concerns: Major Appliance Corp., Montgomery Ward & Co., Potter Refrigerator Corp., Sears, Roebuck & Co., and Truscon Steel Co. The report below covers the sales and inventories of household refrigerators only. Reports on sales of commercial units and production have not been completed.

HOUSEHOLD Lacquer (Exterior) Cabinets Complete	Quantity	Sales for March, 1935		Other Foreign	
		Domestic	Canadian	Value	Value
1. Chest	2,192	\$ 111,195	122	\$ 5,932	780
2. Less than 3.00 cu. ft.	444	26,240	.....	.....	74
3. 3 to 3.99 cu. ft.	6,454	365,999	.....	.....	1,500
4. 4 to 4.99 cu. ft.	33,632	2,184,764	698	50,846	3,177
5. 5 to 5.99 cu. ft.	38,075	2,957,624	419	35,148	1,503
6. 6 to 6.99 cu. ft.	31,173	2,830,811	158	14,677	1,044
7. 7 to 7.99 cu. ft.	13,353	1,451,966	145	15,507	465
8. 8 to 9.99 cu. ft.	3,219	366,796	16	1,794	181
9. 10 to 12.99 cu. ft.	15	3,772	.....	.....	25
10. 13 cu. ft. and up	4	973	.....	.....	.....
11. Total Lacquer	128,561	10,300,140	1,498	123,904	8,749
12. Porcelain (Exterior) Cabinets Complete	.....	.....	.....	.....	.....
12. Up to 4.99 cu. ft.	1,436	108,626	30	2,910	150
13. 5 to 5.99 cu. ft.	7,635	679,339	47	3,953	641
14. 6 to 6.99 cu. ft.	9,796	1,026,218	19	2,013	135
15. 7 to 7.99 cu. ft.	8,026	965,945	22	2,501	281
16. 8 to 9.99 cu. ft.	3,178	454,371	14	1,878	101
17. 10 to 12.99 cu. ft.	578	102,606	3	658	64
18. 13 cu. ft. and up	173	41,063	1	237	27
19. Total Porcelain	30,822	3,378,168	136	14,150	1,399
20. Total—Lines 11 and 19	159,383	13,678,308	1,634	138,054	10,148
21. Separate Systems	.....	.....	.....	.....	.....
22. Separate Household Evaporators	34,566	1,280,502	7	323	1,175
23. Total—Lines 20, 21, 22	194,252	.....	1,726	.....	11,553
24. Condensing Units	.....	.....	.....	.....	.....
25. Cabinets—No Systems	918	36,332	29	1,731	789
26. Total Household	.....	\$15,005,719	.....	\$141,577	.....

454,707 Units in Stock on Jan. 31, 1935

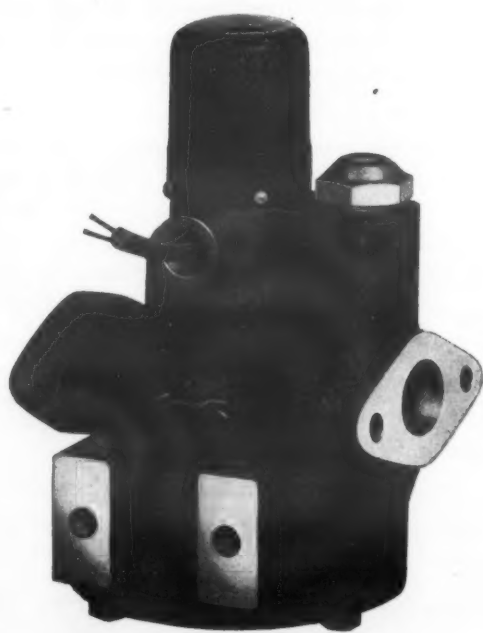
HOUSEHOLD Lacquer (Exterior) Cabinets with Systems		U. S. A. Inventories for January, 1935 Factory, Branch, and Warehouse		Distributors	
	Quantity		Value	Quantity	Value
Under 3.00 cubic feet....	38,524	\$1,934,471	2,005	\$ 100,162	
1. 3 to 3.99 cubic feet....	6,472	372,100	445	27,177	
2. 4 to 4.99 cubic feet....	78,079	4,960,158	19,277	1,235,244	
3. 5 to 5.99 cubic feet....	61,039	4,983,127	16,171	1,274,499	
4. 6 to 6.99 cubic feet....	28,791	2,681,998	12,104	1,128,703	
5. 7 to 7.99 cubic feet....	22,237	2,429,688	6,449	683,351	
6. 8 to 9.99 cubic feet....	4,690	551,743	1,282	145,176	
7. 10 to 12.99 cubic feet....	929	191,881	111	21,692	
8. 13 to 24.00 cubic feet....	124	33,227	44	10,523	
9. Total Lacquer	240,885	18,138,393	*74,770	*5,660,617	
Porcelain (Exterior) Cabinets with Systems					
10. Under 4.99 cubic feet....	7,864	620,284	1,599	136,578	
11. 5 to 5.99 cubic feet....	4,933	459,218	3,294	303,346	
12. 6 to 6.99 cubic feet....	1,752	182,695	4,995	536,311	
13. 7 to 7.99 cubic feet....	15,668	2,051,245	3,684	467,029	
14. 8 to 9.99 cubic feet....	4,968	785,965	2,078	306,523	
15. 10 to 12.99 cubic feet....	1,006	188,008	380	71,564	
16. 13 to 24.00 cubic feet....	1,566	383,086	326	80,308	
17. Total Porcelain	37,757	4,670,501	*24,252	*2,782,203	
18. Total—Lines 9 and 17....	278,642	22,808,894	*99,022	*8,442,820	
19. Separate Systems	64,555	3,051,623	.....	.....
20. Separate Household Low Sides	12,244	167,139	244	4,630	
21. Total—Lines 18, 19, 20...	355,441	.....	*99,266	.....
22. High Sides .....	.....	.....	.....	.....
23. Cabinets—No Systems....	3,032	179,350	194	10,945	
	99,104	3,623,416	31	2,592	
24. Total Household .....	.....	\$29,830,422	.....	*\$8,460,927

*These totals are not the sum of the breakdown figures as two companies did not report on individual items.

Stocks for February Total 513,855 Units

HOUSEHOLD Lacquer (Exterior) Cabinets with Systems	U. S. A. Inventories for February, 1935		Distributors	
	Factory, Branch, and Warehouse	Value	Quantity	Value
1. Chest	45,480	\$2,291,658	2,896	\$ 143,261
2. Less than 3.00 cubic feet.....	98	6,770	13	635
3. 3 to 3.99 cubic feet.....	5,701	327,967	801	48,427
4. 4 to 4.99 cubic feet.....	87,662	5,557,230	21,307	1,390,943
5. 5 to 5.99 cubic feet.....	67,916	5,543,437	17,960	1,408,716
6. 6 to 6.99 cubic feet.....	37,616	3,505,994	13,095	1,214,723
7. 7 to 7.99 cubic feet.....	42,733	4,820,764	8,301	885,510
8. 8 to 9.99 cubic feet.....	5,076	598,395	1,075	121,256
9. 10 to 12.99 cubic feet.....	923	168,867	94	18,825
10. 13 and up cubic feet.....	123	33,011	44	11,363
11. Total Lacquer	293,328	22,854,093	*89,734	*6,440,751
Porcelain (Exterior) Cabinets with Systems				
12. Up to 4.99 cubic feet.....	7,591	606,408	969	76,857
13. 5 to 5.99 cubic feet.....	5,051	470,290	3,275	301,499
14. 6 to 6.99 cubic feet.....	2,509	263,227	4,616	493,877
15. 7 to 7.99 cubic feet.....	15,969	2,078,079	3,544	459,987
16. 8 to 9.99 cubic feet.....	6,905	1,105,372	2,168	321,818
17. 10 to 12.99 cubic feet.....	1,014	183,754	473	89,454
18. 13 and up cubic feet.....	1,667	407,480	307	75,781
19. Total Porcelain	40,706	5,114,610	*22,442	*2,559,498
20. Total—Lines 11 and 19	334,034	27,968,703	*103,176	*9,000,249
21. Separate Systems .....	.....	.....	.....	.....
22. Separate Household Evaporators	65,377	3,006,102	.....	.....
23. Total—Lines 20, 21, 22.....	11,049	151,235	219	4,740
24. Total—Lines 20, 21, 22.....	410,460	.....	*103,395	.....
25. Condensing Units .....	.....	.....	.....	.....
26. Cabinets—No Systems.....	2,897	177,338	225	12,926
27. Total—Lines 25 and 26.....	101,880	3,689,224	41	3,657
28. Total Household .....	.....	\$34,992,602	.....	*\$9,021,572

*These totals are not the sum of the breakdown figures as two companies did not report on individual items.



40 Tons

That's the capacity of this solenoid operated refrigerant control valve. Based upon the by-pass principle, it has very low power consumption. Supplied complete with 1" or 1 1/4" flanges for sweat fittings. Available in wide range of voltages. Write today for Bulletin 403.

AUTOMATIC PRODUCTS COMPANY
121 N. Broadway Milwaukee, Wis.

REFRIGERATION TUBING . . . Clean Bright Finish
. . . Absolutely Dry and with Uniform Soft Temper.
Guaranteed ASTM Specification B68-33. Well
stocked for immediate delivery.

WOLVERINE TUBE CO.

SEAMLESS COPPER BRASS & ALUMINUM

DETROIT

MICHIGAN

SERVICE

How to Service 'Socold' Units; 1. Compressor, Expansion Valve

SOCOLD household electric refrigerators were manufactured by the Socold Refrigerator Corp. of Lynn, Mass. The company went out of business in 1929. The unit it manufactured comprised a two-cylinder belt driven compressor. ELECTRIC REFRIGERATION NEWS is indebted to Alfred K. Anderson of West Orange, N. J., for the following information, taken from the Socold Direct Expansion Manual.

In the compression type of unit there are three principle parts, namely,

1. The compressor and condenser, usually located at the base of the chest.
2. The (frost unit) or boiler, located in cooling compartment of chest.
3. The pressure reducing valve or expansion valve located in the chest.

When a liquid changes to gas, it is because heat has entered the liquid. It is upon this principle that Socold operates.

Let us first get clearly in mind that the temperature at which a liquid will boil or vaporize is different for every liquid, and that further, the pressure has a lot to do with it too. For instance, water under an atmospheric pressure of 15 lbs. per square inch, as it would be upon a mountain 15,221 ft. above sea level, the boiling point would be reduced to 184° F.

The Socold refrigerator uses liquid sulphur dioxide (SO_2) which at 15 lbs. pressure per square inch has a boiling point between 14 and 15° F., but at 65 lbs. pressure the boiling point is about 96° F., therefore, if in the condenser we have liquid sulphur dioxide under pressure of 80 lbs. per square inch, it will not boil because at this pressure the boiling point is well above 100° F.

In order then to remove heat from the chest, it is necessary to cause the SO_2 to boil. Therefore, liquid SO_2 , which is at about 80 lbs. per square inch, is forced through the $\frac{1}{4}$ -in. tubing up to the expansion valve. As the liquid gas passes through the expansion valve into the frost unit, its pressure is reduced to about 15 lbs. per square inch.

At this low pressure the SO_2 will boil if the temperature of the walls of the frost unit is more than 15° F. If the temperature was exactly 15° F., no boiling would take place as it requires a difference of temperature for heat to flow. If the liquid SO_2 does boil or vaporize, the heat laden vapor or gas is drawn, by suction, back to the compressor, where it is compressed again to about 80 lbs. per square inch.

This gas now is forced into the top of the condenser where by the draft of air from the fan, it is cooled and gradually condenses and settles into

BEWARE OF FLUXES THAT PRODUCE POISONOUS FUMES

Protect Your Workmen

Avoid using fluxes containing FLUORIDE COMPOUNDS in your Silver Soldering operations. The fumes produced by FLUORIDES are POISONOUS and IRRITATING to the lungs and throat and cause occupational diseases that are serious and sometimes fatal.

"FLUXINE" FLUXES are NON-POISONOUS, NON-CORROSIVE AND NON-IRRITATING.

Have been in use for forty years.

Their melting points are below that of any Silver Solder and considerably below that of Borax, which requires 1400° F.

"FLUXINE" FLUX SCALES are quickly removed by hot water.

CLEANING COSTS reduced to a minimum.

"FLUXINE" PRODUCES BEST RESULTS AT LEAST COST PER JOINT. Try "FLUXINE" PASTE No. 41 with any grade of Silver Solder on any ferrous or non-ferrous metal and BE CONVINCED. Free working sample sent on request.

Krembs & Company

Consulting Brazing Engineers and Flux Manufacturers Since 1895
669 W. Ohio Street Chicago, Illinois

We manufacture "FLUXINE" FLUXES for every known method of brazing—silver soldering—soft soldering—spot welding and other welding operations.

Service Data on Other Refrigerators

This article is one of a series published by Electric Refrigeration News to give the service man help in servicing various makes of machines. Most of the makes described to date have been "orphan" machines on which service information is no longer readily available.

Service instructions on the following makes were published in these issues:

Absopure household.....	March 25, 1931
Majestic hermetic.....	Aug. 16, 1933
Allison.....	May 30 & June 6, 1934
Welsbach.....	June 13, 20 & 27, 1934
Rice household.....	July 4, 1934
Wayne household.....	July 11, 1934
Absopure com'l.....	July 18, 25 & Aug. 1, '34
Iceberg.....	Aug. 8, 1934
U. S. Hermetic.....	Aug. 15, 1934
Belding-Hall ElectriCE.....	Aug. 22 & 29, 1934
Majestic standard.....	Sept. 12, 19 & 26, '34
Holmes household.....	Oct. 10, 17 & 24, 1934
Iroquois.....	Feb. 20 & 27, 1935

the lower section of the condenser ready to start over again.

This cycle is repeated until the frost unit has given up so much heat that its temperature has been pulled down to nearly 15° F. If the expansion valve was adjusted so that the pressure was reduced to below 15 lbs. per square inch, the temperature could be made even lower than 15° F.

It is not necessary or wise to have such low temperature in a household refrigerator, however, so in the Socold, a thermostat shuts off the motor, when the temperature of the frost unit is lowered to about 18° F.

When the machine shuts off, the pressure of the liquid SO_2 in the frost unit naturally increases, which causes the boiling of the SO_2 to stop. This is because the boiling point of a liquid is raised as the pressure increases.

SO_2 to boil at 20° F. must be at a pressure of 17 lbs. per square inch, while if the pressure increases to 27 lbs. per square inch it boils at 40° F. If then the boiling point of the SO_2 (because of the pressure) is equal to or higher than the temperature of the frost unit walls, boiling will stop until the thermostat again starts the system and the pressure is again reduced.

Refrigeration then is accomplished as follows: In a refrigerator of the side-icer type as the air surrounding the frost unit gives up its heat, it becomes heavy and falls into a lower compartment, forcing a movement of air around the chest. This movement of air carries whatever moisture is present and deposits it on frost unit, where it appears as frost.

The colder air being heavy makes the chest temperature vary in the different compartments as follows: lower left food compartment 35 to 38° F. Lower right food compartment 40° F. and upper right food compartment 45 to 50° F.

It can also be seen, that if the air circulation is interfered with, some sections of the chest may not get refrigeration. Also, if the frost is allowed to become too thick on the frost unit, it will act as a blanket, retarding the flow of heat into the frost unit containing the sulphur dioxide waiting to boil.

One-eighth inch frost reduces refrigeration 25 per cent.

In olden days, newspapers were wrapped around the ice to prevent it from melting, which only retarded the flow of heat from the chest into the ice, which of course defeated the purpose of its (the ice) being there. The ice lasted longer but the chest temperature remained high.

Refrigerant

In all models of Socold, the SO_2 is sealed in the condenser which is fastened on the same base as the compressor.

The sulphur dioxide as used in Socold is extra dry having a moisture content not averaging more than 0.01 per cent.

The quantity of SO_2 used in Socold

Socold Assembly Showing Parts

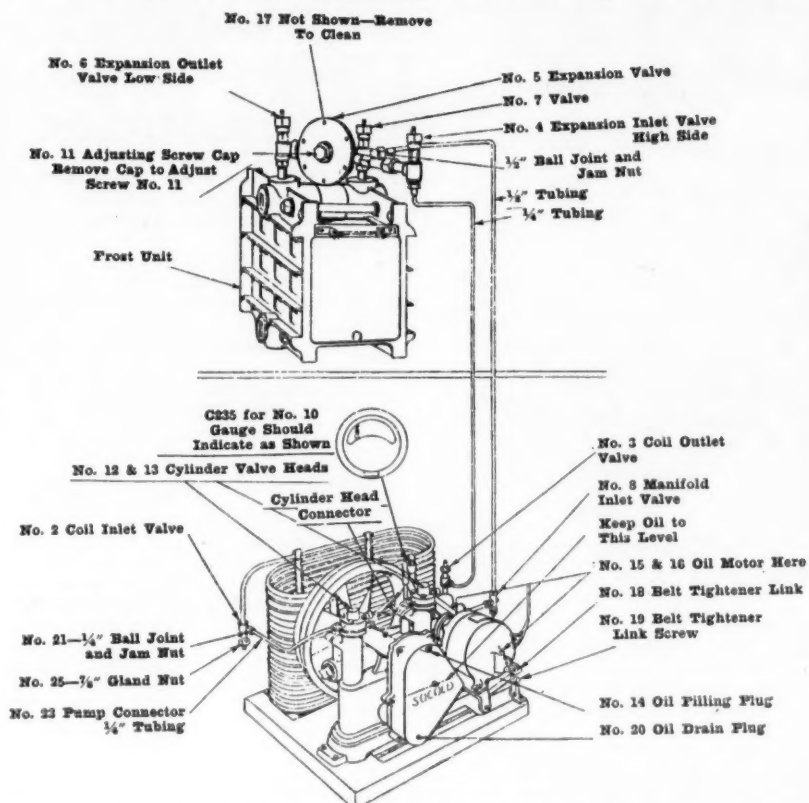


Fig. 1. General layout of the Socold household refrigeration system, showing compressor, chilling unit, and various valves, numbered as referred to in the service manual printed on this and the following page.

is determined by the size of frost unit used, and varies upward from 5 lbs. Further details given under cooling method.

Precaution: Air and moisture must be kept out of system. Extreme care is taken, during the process of manu-

facturing and assembling, that no material or parts are used until thoroughly dry. All air contains more or less moisture, and if water (H_2O) is added to sulphur dioxide (SO_2) the combination is sulphurous acid (H_2SO_3).

In remote installations the service man must see to it that all of the air is pumped out of tubing, frost unit, and compressor before opening the condenser valves to allow the SO_2 to circulate.

If at any time any section of a Socold system is opened for any reason, the air must be removed from that part before attempting to renew operation.

Testing for SO_2

One of the advantages of SO_2 is that it is detectable.

Concentrated or 28 per cent ammonia is used when testing for gas leaks. When it is brought where gas is present, the resulting combination is a white smoke.

A leak which is so tiny that it would go unnoticed can be located by this method.

Ammonia turns brass and copper a green color, so be careful not to allow ammonia to drip and discolor these parts.

Cooling Method

Socold uses the direct expansion system.

The frost unit is made of heavy galvanized semi-steel, rigidly supported in place. This construction is very substantial, thereby reducing the possibility of damage during handling and shipping.

Cabinet models Nos. 26, 27, 36, and 37 are equipped with frost unit No. 19. Five lbs. of SO_2 is supplied with this size unit.

Cabinet models Nos. 46 and 47, use frost unit No. 18 with 6 lbs. SO_2 .

Cabinet models Nos. 56 and 57, use frost unit No. 17 with 9 lbs. SO_2 .

These frost units are given an air pressure test of 300 lbs. per square inch and an hydrostatic test of 350 lbs. They are then thoroughly baked and dried before being used.

The frost unit is equipped with two valves. The inlet valve, called No. 6,

(Concluded on Page 16, Column 1)

RUGGED as an Ox



● The renowned ruggedness of Brunner refrigeration is a product of the vision which Brunner engineers bring to their task. For no Brunner part...not even the smallest...is ever designed merely for the job-in-hand, just to "get by". Brunner designing takes into honest consideration next year's service, and the year after, and the year after that!

That's why when you specify Brunner Highsides and Compressors, you're sure to get equipment with a Future...equipment which bucks the toughest service conditions ruggedly and economically... There's an improved Brunner unit for your refrigeration specifications: 8 models of compressors, 41 models of highsides, from 1/6 H.P. to 15 H.P.

Brunner Manufacturing Company
Utica, N. Y., U. S. A.



The Brunner Commercial Model—Quiet—Carefree—Economical. 2 Cylinders. In a range from 1/4 H. P. to 2 H. P.

Brunner

A NAME BUILT BY 29 YEARS OF SERVICE

SERVICE

Expansion Valve

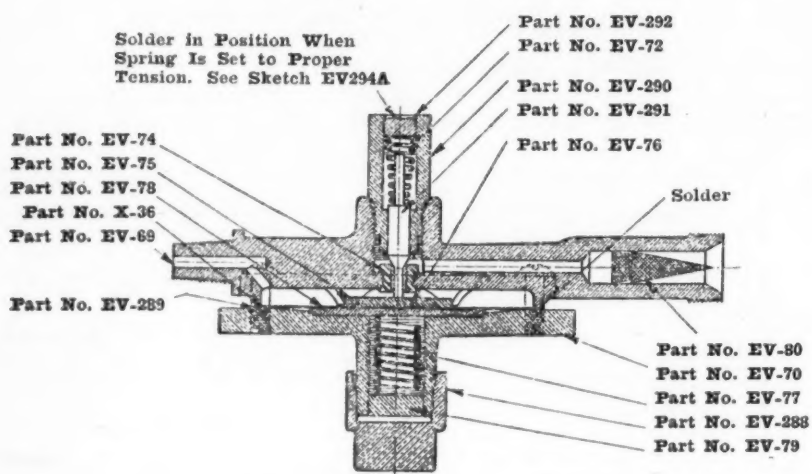


Fig. 2. Expansion valve for the Socold system, showing parts number and method of soldering in position.

Service Instructions
On 'Socold' Unit

(Concluded from Page 15, Column 5)
has a 1/4-in. female pipe thread. The outlet valve called No. 7, has a 1/4-in. x 20 male thread. These valves, while not an absolute necessity, will be appreciated in the event of service being required.

Generally the frost unit is hung by straps from the top of the compartment.

Expansion Valve (Valve No. 5)

The expansion valve is the most simple and rugged device that can be used as a pressure reducer.

One end of the expansion valve is threaded into valve No. 6. This is the beginning of the low pressure side of the system.

The other end of the expansion valve, which is the high side, has a 1/4-in. x 20 male thread.

To this high side is connected a valve called No. 4. This connection is dependent on a 1/4-in. x 20 attachment nut and a split ring which is a part of valve No. 4. If this joint is ever broken do not lose this split ring.

By means of these valves, No. 4 and No. 6, all parts of the expansion valve may be easily reached and cleaned.

Method of Cleaning Expansion Valve

As shown on the drawing, a screen is placed in the high side of valve No. 5 to reduce the possibility of dirt or sediment getting on the valve stem.

If it is ever necessary to clean the expansion valve, first close valve No. 4 and run compressor until gas is drawn out of the expansion valve.

Caution: Do not apply heat to hasten the gas out of the expansion valve, because to do so will melt the wax which is between the base and cover of the valve No. 5.

It is only necessary to pump about five minutes, especially if letting out a little gas will not be objectionable. To clean the screen, break the connection between the expansion valve and valve No. 4. The valve stem and seat should also be cleaned. This can be easily reached by removing nut No. 17.

Caution: Remove the air, before restarting the system, as follows: tighten the attachment nut between valve No. 4 and the expansion valve.

Double Seating Stem

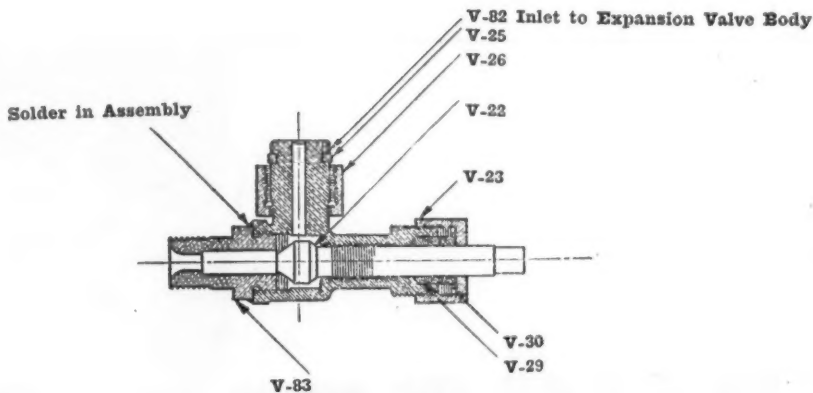


Fig. 3. Valve showing double seating stem, which was a feature of valves used in the Socold unit.

Leave the nut which holds the valve stem in place a trifle loose. Open one-quarter turn, and then quickly close valve No. 4, and when the gas escapes quite freely by the loose valve stem nut, tighten it. This will purge the expansion valve. Reopen valves No. 4 and 6, test for gas and start motor.

Construction of Valves

Construction of valves Nos. 2, 3, 4, 6, 7, and 8. As can be seen from the drawings, all valves are double seating, therefore, when opening and closing

ing them turn the stem as far as it will go.

When doing this, loosen the gland nut and use the ratchet wrench. Do not use Stillson wrench. Retighten gland nut.

By examining the drawing of the expansion valve, it will be noted that a mechanical adjustment is provided by a screw plug in the cover. In order to prevent the possibility of moisture following down the threads of this plug, it is covered by a heavy brass cap. Be sure that this cap is always on tight.

Compressor

The heart of all refrigeration systems is the compressor.

The castings contain a high percentage of steel; the walking beam, connecting rods, rocker shaft and tapered drive shaft are fitted with adjustments to compensate for natural wear.

To Tighten Tapered Shaft and Fan Wheel

To take up on tapered shaft, loosen the 1/4-in. Allen set screw which locks fan fly wheel to shaft, then tighten slightly the cap screw (X-5), while at the same time keeping the fan wheel moving by hand, so as not to make shaft too tight. Then retighten Allen set screw.

To Adjust Rocker Lever

To take up on rocker lever connector bearings, first loosen locking screw (E), (see drawing), second, tighten bearing by screwing down screws marked (D), until connection is a running fit with no play. Then tighten locking screw (E).

If at any time either piston touches or hits the head, first try an extra cylinder head gasket. If this is not

SERVICE OPERATIONS

A SERIES OF LESSONS OUTLINED FOR THE USE OF THE SERVICE MANAGER IN INSTRUCTING BEGINNERS IN SERVICE WORK

No. 5—Purging the Liquid & Suction Lines
(Flooded System)

By K. M. Newcum

REASON:

It is necessary to purge the air from the line before connecting them to the system as air is very harmful to the inside of the system and causes excessive operating head pressures.

PROCEDURE:

A. Loosen the liquid line flare nut at the cooling coil. (Care must be taken when working around this valve as there is always the danger of breaking the valve off the header if too much pressure is applied. For that reason, it is advisable to always hold the valve with a wrench before loosening the flare of the valve plug.)

B. Crack (open slightly) the liquid line shut-off valve on the receiver until a small rush of gas is heard coming from the liquid line at the coil.

C. Close liquid line shut-off valve, and as quickly as possible tighten the liquid line flare nut at the coil.

D. Open the liquid line shut-off valve admitting liquid to the liquid line.

E. Test both joints with 26 per cent ammonia.

F. Loosen the suction line flare nut at the suction line shut-off valve on the compressor.

G. Crack the suction line shut-off valve at the cooling coil until a small rush of gas is noticed at the suction line at the compressor.

H. Close the suction line shut-off valve at the cooling coil and tighten the flare nut on the suction line valve on the compressor.

I. Open the suction line shut-off valve at the coil admitting sufficient pressure to build up in suction line to test for leaks.

J. Test for leaks with 26 per cent ammonia.

K. Check with instructor.

Caution: There is considerable danger in purging and goggles should be worn during this operation. If they aren't worn, take care to keep your eyes away from the ends of the lines while the gas is escaping.

The rocker lever and connectors run in oil. A can of medium weight motor oil is furnished for this purpose. If the oil slaps with this amount, either draw off or add oil until slap stops.

Compression

The pistons and cylinder walls are ground to a very close fit.

Every compressor must pump at least 200 lbs. before it is passed. This is ample capacity as the pressure on the high side of the system is usually only about 80 lbs. per square inch.

The second section of the "Socold" service manual, which will appear in the next issue, will discuss compressor valves, seal, condenser, and thermostat and will give directions for starting a "Socold" machine.

Lyons Elected Treasurer
Of Westinghouse

EAST PITTSBURGH—L. W. Lyons, since 1904 a member of Westinghouse Electric & Mfg. Co.'s credit department and more recently manager of that department, has been elected treasurer of the company.

Mr. Lyons, who has also served as assistant secretary and assistant treasurer of Westinghouse, is a specialist in credit problems and accounting procedure of a nature encountered in a large corporation doing business internationally.

New York Firm Builds
Vibration Eliminator

LONG ISLAND CITY, N. Y.—The vibration eliminator, a new shock absorber or cushion for machinery, has been introduced by the Vibration Eliminator Co., manufacturer of materials for the isolation of machinery vibration.

The new product consists chiefly of a base stamping and supporting housing to which the leg or base of the machine may be rigidly fastened. The isolating material in the device is natural cork.

It does not take a permanent set under excessive loading, will not compress after the initial compression, and has a time lag in its return after compression.



VALUE

Makers of automatic refrigeration devices take a justifiable pride in the values built into their products. They know that repeat orders come from the endorsements of satisfied customers and that such endorsements are born of honest values.

For more than a quarter of a century Commonwealth Brass Corporation has delivered maximum values with resultant satisfaction to its customers who in turn receive the plaudits of their customers for genuine value received.

In the matter of fittings, values to all concerned are represented by seepage-proof pieces, carefully cut threads, accurately machined tube seats, careful packaging and full count always.

In-so far as our specialties are concerned, i.e., pipe and tube fittings, we render to the industry a complete service conditioned on our understanding of the function these important accessories play in delivering satisfaction to the ultimate user.

Hundreds of types of fittings in stock for prompt shipment. Quotations promptly on special pieces on receipt of sample, blue-print or sketch.

COMMONWEALTH
BRASS CORPORATION

Commonwealth at G. T. R. R.
DETROIT, MICHIGAN

Position of Compressor Parts

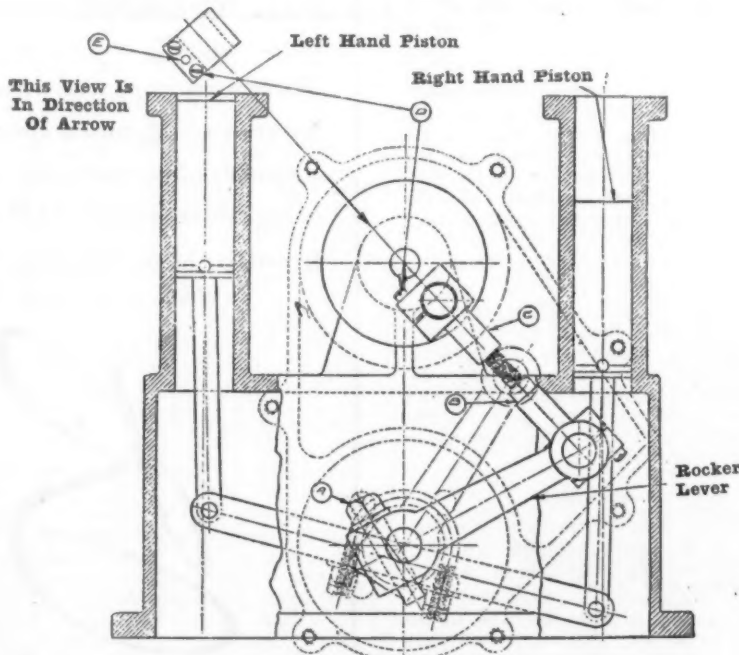


Fig. 4. Drawing of compressor showing position of pistons, walking beam, rocker-lever, and adjustments.

MCCORD
Refrigeration
PRODUCTS

COMMERCIAL EVAPORATORS

DOMESTIC EVAPORATORS

CONDENSERS

METLFLEX ICE TRAYS

SPIRAL FINNED TUBING

SPIRAL COPPER FINNED IRON, STEEL OR COPPER PIPE

MCCORD RADIATOR & MFG. CO. DETROIT

INSTALLATION OPERATIONS

A SERIES OF LESSONS OUTLINED FOR THE USE OF THE SERVICE MANAGER IN INSTRUCTING BEGINNERS IN INSTALLATION WORK

No. 5—Making a Spring Bend, Using the Outside Bending Spring

By K. M. Newcum

TOOLS NEEDED:

One outside bending spring.

MATERIALS NEEDED:

One piece of 1/2-inch tubing 18 inches long.

PROCEDURE:

1. Straighten the tubing perfectly straight.
2. Mark the tubing where the bend is to be made.
3. Make another mark on the tubing, at a distance from the first equal to one-half the total length of the bending spring (compressed).
4. Slide the bending spring over the tube until the end of the spring is flush with the second mark on the tubing. The first mark will be covered by the spring but will be in the center.
5. Proceed to bend the tubing, as in bending with the inside spring. (Lesson No. 4.)
6. Remove the spring.
7. Check with instructor.

Note: Always remove the spring before flaring the end of the tubing.



Outside bending spring (Imperial Brass Co., Chicago).

BOOKS

Henley's Book of 10,000 Formulas, Processes and Trade Secrets

Edited by Prof. T. O'Connor Sloane.
Publisher: The Norman W. Henley Publishing Co., New York City.
Pages: 809. Price: \$4.

To catalog all of the kinds of people who would find this book useful would be to list practically every occupant of the United States, for this volume for years has been the standard reference work for persons who want to find out everything from the ingredients of absinthe to how to mix their own zinc ointment. It has some practical advice on almost everything under the sun; yet, despite the wide range of topics covered, it manages to do a pretty thorough job in most of the fields. Refrigeration is given a page and a half, only one-third of which is de-

voted to mechanical refrigeration. Technical men will find nothing here which is not familiar to them, since the coverage is strictly from the layman's standpoint, and none too detailed at that.

The cycle of refrigeration, however, is explained in a few words, and composition of various freezing agents listed, so that the refrigeration-minded layman may piddle around a bit for himself without doing himself or family a great deal of harm.

Aside from this, Editor-Prof. T. O'Connor Sloane has given the book a fairly thorough revision, and has added a number of extra features to the standard collection of formulas, processes, and trade methods which one expects to find in a work like this.

For one thing, a classified buyers' finding list has been added, so that readers experimenting with formulas will know from whom to get needed supplies. Another section explains, non-technically, the composition of hundreds of chemical substances called for in using the book.

Formulas themselves have been revised, and latest methods and trade practices have been included.

Both amateurs and professionals should find this book interesting. There are about 10,000 different formulas for all sorts of things for the householder, farmer, mechanic, laboratory worker—all the way from making household washing powders and writing inks to practical methods of heat-treating steel.

The cross-reference index is quite complete, and the section on laboratory methods is written simply enough for most readers to understand.

Virginia Smelting Names Six New Distributors

WEST NORFOLK, Va.—Virginia Smelting Co., manufacturer of sulphur dioxide and methyl chloride liquid refrigerants, has announced appointment of a number of agencies to handle its products, "Extra Dry Esotool" and "V-Meth-L" (Virginia Methyl Chloride).

The agencies are: Middle Tennessee Electric Co., Nashville, Tenn.; Baker Ice Machine Co., Fort Worth, Tex.; Walter Connolly & Co., Tyler, Tex.; G. S. Blodgett Co., Burlington, Vt.; National Air Conditioning Co., New York City, and the Perry Metal Products, Inc., New York City, the latter handling methyl chloride only.

Shannon Appliance Moves St. Louis Store

ST. LOUIS—New location of the Shannon Appliance Co., representative of James & Co., General Electric distributor for St. Louis, is 5400 Gravois Ave. here. The company was formerly located on Kings Highway.

To create interest among prospects the Shannon Appliance Co. gives away a major General Electric appliance the first of every month at a special prize drawing. Each Saturday night a demonstration of some G-E appliance is given in the show window.

Frigidaire Sales in West Penn Campaign Hit \$140,000 Mark

FAIRMONT, W. Va.—Dollar volume of sales made during the eight weeks' Frigidaire Spring Parade conducted by the Monongahela West Penn Public Service Co. totaled close to \$140,000, or 199.9 per cent of the quota of \$70,000. This is the first time that Frigidaire sales have surpassed the \$100,000 figure in a spring campaign, officials state.

The Elkins division led the territory with 282.2 per cent of quota through sales of \$9,879.50, as compared with the original quota of \$3,500. The Parkersburg group was second with sales totaling \$28,397.91 or 270.4 per cent of the quota of \$10,500.

Third in the running was the Fairmont area of the eastern division with total sales of \$37,391.63 or 232.2 per cent of their quota. Fourth place went to the Clarksburg division with 187.8 per cent of quota, that is \$14,700.

The Morgantown area was fifth with a quota per centage of 158.8. The Panhandle division came sixth with 144 per cent of quota. The Southern division, although bringing up the rear, also surpassed the quota of \$2,800 by reporting sales of \$3,043.52 for a percentage of 108.7.

H. H. Powell, Fairmont, took top ranking individual honors in the Frigidaire campaign with sales of \$11,290.85. C. L. Zirkle, Parkersburg, followed with a sales volume of \$9,242. Third was Lee Grimm, Elkins, with \$8,780.50, and N. M. Jackson, Clarksburg, fourth with \$8,667.67. V. O. Moore, Shinnston, completed the first five with total sales of \$7,169.74.

Other high ranking salesmen and their volume of sales were:

D. R. Helmick, Parkersburg, \$6,586.12; Thomas Torch, Morgantown, \$6,337; R. B. Brooks, Fairmont, \$6,246.76; E. H. Taylor, Parkersburg, \$5,284.69; G. R. Dutton, Clarksburg, \$4,936.39; H. W. Casteel, Morgantown, \$4,864.50; R. L. Hoffman, Wellsburg, \$4,436.72; J. S. Killian, Grafton, \$4,421; Homer Deem, Parkersburg, \$4,230.10.

Cinderella Radio Co. Opens New Store

CHICAGO—After a year of operating the two radio departments of Carson, Pirie, Scott & Co., the Cinderella Radio Co., Inc., has withdrawn from that connection and has opened a new branch store at Milwaukee and Irving Park Blvd., reports John T. West, manager of the main store of the radio company.

William Friede, formerly in charge of the radio departments at Carson, Pirie, Scott & Co., is manager of the new store; Mr. McGinnis is assistant manager.

The new concern handles the following electrical appliances: Norge, Leonard, and Stewart-Warner refrigerators; Stromberg-Carlson, Philco, Atwater Kent, and General Electric radios; Dexter, Maytag, Apex, and Thor washers and ironers; various cleaners, etc.

3 More Department Stores In Chicago Handle G-E

CLEVELAND—Department stores which have just started to handle the General Electric refrigerator and other appliances include Marshall Field & Co., Wieboldts, and Carson, Pirie, Scott & Co., reports Ralph C. Cameron, manager of the department store division of G-E's specialty appliance department.

Other department stores handling the G-E line here include:

Strauss & Schram stores, the Boston store, Frank's, Meier's, John M. Smythe Co., Rudolph Wurlitzer Co.

Southwest Wesco Branches Exceed Sales Quotas

ST. LOUIS—All branches of the Westinghouse Electric Supply Co. in the southwest territory exceeded their refrigeration quotas in the first quarter of 1935, company officials report.

Westinghouse refrigerator sales quota record for first quarter were: Wichita, Kan., branch, 281 per cent; Memphis, Tenn., branch, 243 per cent; San Antonio, Tex., branch, 265 per cent; Houston, Tex., branch, 224 per cent; Oklahoma City, Okla., branch, 250 per cent; St. Louis, 287 per cent.

Gross Bros. Form Norge Outlet in Baltimore

BALTIMORE—Charles A. Gross, who for the past 10 years has been identified with the refrigeration and radio business of Brunswick, Md., has formed the firm of Gross Bros. with his brother, William Gross, and has just opened new retail sales and showrooms at Brunswick, featuring Norge exclusively in refrigeration and Philco in radio.

BUYER'S GUIDE

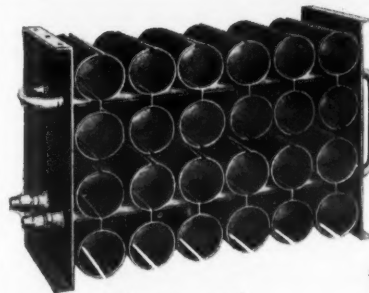
MANUFACTURERS SPECIALIZING IN SERVICE

TO THE REFRIGERATION INDUSTRY

SPECIAL ADVERTISING RATE (this column only)—\$12.00 per space.

Payment is required monthly in advance to obtain this special low rate.

Minimum Contract for this column—13 insertions in consecutive issues.



KRAMER BOTTLED BEER-COOLING COILS

All a need, and bring business. All copper and brass construction. Made in different sizes for different capacities.

(See our ad on page 2)

TRENTON AUTO RADIATOR WORKS

210-212 West 65th St. TRENTON 5114 Liberty Ave.
New York City New Jersey Pittsburgh, Pa.

Write for prices and information

TYPE KR—5 MODELS

RANCOSTAT

—the
Stainless Steel
Thermostat

Rancostats keep service calls down—and customer-satisfaction up! Examine our new Type KR and you'll see why. Simple construction. Sound engineering. Built to stay on the job and give long, dependable service. Write for KR bulletin.

The Automatic Reclosing Circuit Breaker Co.
Columbus, Ohio



CONDENSING UNITS AND COMPRESSORS FOR HOUSEHOLD REFRIGERATION

JOMOCO, INC.

A SUBSIDIARY OF THE JOHNSON MOTOR CO.
Waukegan, Ill.
CABLE ADDRESS: JOMOCO-WAUKEGAN

Everything Needed PARTS-SUPPLIES-TOOLS

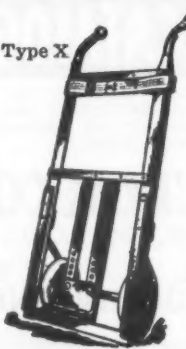
FOR SERVICING and INSTALLING ALL MAKES OF REFRIGERATION EQUIPMENT

We have what you need for repairing and installing all types of domestic and commercial refrigeration equipment. Our stock is complete. Our service is speedy and accurate. We are as near you as your telephone. Send business card or letter-head for our elaborate Free catalog.

WHOLESALE ONLY

For Your Protection

IMMEDIATE SERVICE UTILITIES ENGINEERING SALES CO.
Telephone: DELaware 5350 410 N. Wells St., Chicago

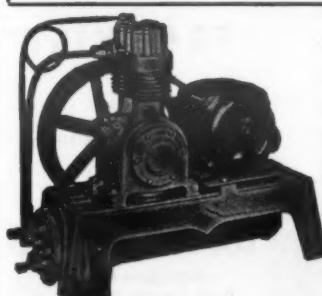


The DAYTON CARRIER TRUCK Deliver your Refrigerators on Rubber Will Not Mar—Speeds Delivery

Two sizes—Type X with 53 inch handles and 8 inch rubber wheels—Type Y with 70 inch handles, 8 inch rubber wheels and skids.

Type X with one strap.....\$17.00
Type Y with one strap..... 18.50
f.o.b. Dayton

International Engineering Inc.
Dayton, Ohio 15 Park Row, N. Y.



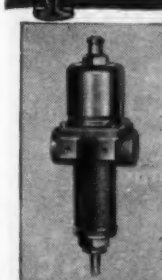
STARR FREEZE OUTSTANDING PERFORMANCE attested by satisfied users — EVERYWHERE!

Sturdy Condensing Units from 80 to 2868 Lbs. I.M.E., and all other commercial refrigeration equipment—Wall type cases with machinery—A beautiful household line of modern, conservative styles—Write for full data.

THE STARR COMPANY

Cable "Starr" Richmond, Indiana (factory) Since 1927
1344 S. Flower St., Los Angeles, Calif.

STANDARD REFRIGERATING APPLIANCES



PRESSURE CONTROL WATER REGULATING VALVE

Write for bulletin on complete line covering refrigerating appliances, liquid line filters, dehydrators, acid neutralizers, standard parts and materials, service tools, shaft seals, bearing metals and parts. Descriptive literature will be gladly furnished on any or all of these lines on request.

AMERICAN INJECTOR COMPANY 1481-14th. Street, Detroit, Mich.

ATTENTION COMMERCIAL REFRIGERATION SALESMEN

One of our Clients, who has manufactured display equipment for meat markets, delicatessen and grocery stores for more than 25 years, has choice territories open for salesmen.

The product is a humidifying stand for displaying vegetables and produce. There are more than 20 models. Prices are well within competition and the stand has exclusive features that cannot be copied.

Your present customers are prospects. Only high calibre men with proven ability will be considered. Inquiries held in strict confidence. Write to:

JOHN L. WIERENGO & STAFF, Inc.,
610 Building & Loan Bldg. Grand Rapids, Mich.

CURTIS REFRIGERATION

Commercial & domestic units, 1/6 h.p.—15 h.p.
Distributor franchises available. Write to:
CURTIS REFRIGERATING MACHINE CO.
Division of Curtis Manufacturing Company
1912 Kienlen Ave., St. Louis, Mo.

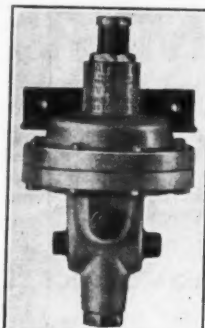
TEMPRITE INSTANTANEOUS BEER and WATER COOLERS DETROIT - MICHIGAN

LARKIN COILS for AIR CONDITIONING

BUYER'S GUIDE

MANUFACTURERS SPECIALIZING IN SERVICE
TO THE REFRIGERATION INDUSTRY

SPECIAL ADVERTISING RATE (this column only)—\$12.00 per space.
Payment is required monthly in advance to obtain this special low rate.
Minimum Contract for this column—13 insertions in consecutive issues.



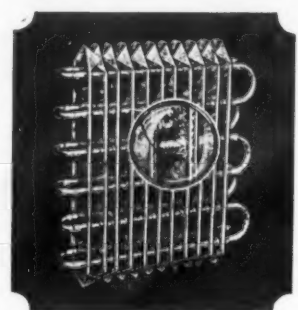
BAROSTAT VALVES

CORROSION PROOF

Compensated Temperature Control
Freon — Methyl Chloride — Sulphur Dioxide

Write for New Bulletin describing Load Compensation

BAROSTAT Co. 48 Binford St., Boston, Mass.



CONDITIONAIRE FIN COILS

The Coil with a Permanent Fin Contact

Standard size for every commercial application—
Suitable for all refrigerants—
Greater conductivity, greater efficiency—
Special sizes for air conditioning.

Write for Complete Data Book

CONDITIONAIRE UNIT COMPANY
2821 Montrose Ave. Chicago

HULL Improved Leak Detector

The most convenient, surest and quickest means of detecting and locating Halide Gas Leaks in refrigerating units.

Positive, Instantaneous
... most sensitive and accurate

Improved burner design, "Y" suction tube and non-clogging feed valve make the HULL Detector the most efficient for all testing and servicing requirements. Recommended and used by manufacturers of Halide Refrigerant Gases, equipment manufacturers and engineers everywhere. Low first cost and inexpensive operation.

Write for Description and New Low Price

Hull Manufacturing Co. 910 Prospect Ave. Hagerstown, Maryland



ACTION-AIR

A diffused air system for Walk-In Coolers. No changes required in present set-up. Endorsed by National packers, abattoir companies, wholesalers and retailers. Three years of successful operation.

Shrinkage is of paramount importance in the meat industry.

The BROWN Corp.

100 Bellevue Ave., Syracuse, N. Y.

Certain territories open for good distributors



Just Out New BIG CATALOG
Refrigerator service men and dealers send for our catalogue No. 110 showing lowest net prices on thousands of parts and accessories for all makes. Write us on your letter head today.

The HARRY ALTER CO.
1730 S. MICHIGAN AVE. CHICAGO, ILL. U.S.A.

8000 ITEMS FOR ALL MAKES
DOMESTIC COMMERCIAL AIR CONDITIONING

- * LARGE RECEIVERS
- * OVERSIZE CONDENSERS
- * TWIN CYLINDERS
- * 1/6 to 10 H.P. UNITS



"FROSKIST"

for

FREEZER CASES
ICE CREAM CABINETS
WATER COOLERS

PARKER
MANUFACTURING CO.
2625 Santa Fe Ave.
LOS ANGELES, U.S.A.

DOMESTIC COOLING UNITS

Manufactured in sizes from 2 to 8
trays direct expansion type. Ideal
for the assembler of Household
Refrigerators or for replacements.

Attractive Prices

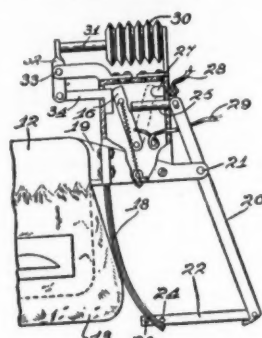
HAROLD L. SCHAEFER INC.
1620 Harmon Place Minneapolis, Minn

PATENTS

Issued April 30, 1935

1,999,191. DEFROSTING. Marcus A. Hirschl, Chicago, Ill. Application Sept. 20, 1930. Serial No. 483,346. 8 Claims. (Cl. 62-4.)

1. In an electrical refrigerator having an evaporator, means for circulating a refrigerant through the evaporator includ-

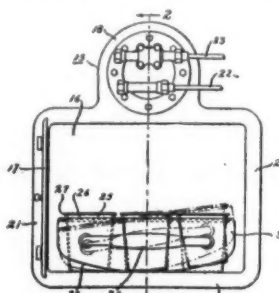


1,999,191

ing a motor, a switch in the current supply line to said motor, a bracket carried by the evaporator, a housing for the switch carried by said bracket, a bimetallic member carried by the bracket adjacent the evaporator, means operatively connected with the free end of the bimetallic member and actuated thereby to open said switch, and a thermal responsive element mounted on said housing and operatively connected to the switch to close the same upon a rise in temperature.

1,999,293. REFRIGERATING APPARATUS. George F. Hoffenberth, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp., a corporation of Delaware. Application Oct. 28, 1931. Serial No. 571,602. 12 Claims. (Cl. 62-108.5.)

7. A refrigerating apparatus comprising in combination, a cooling unit, a support on said cooling unit, a device supported



1,999,293

on said support and having means adapted to contain a substance to be congealed or frozen, means in addition to the supporting surface of said device for normally maintaining the means adapted to contain the substance to be congealed or frozen in direct heat transfer relation with the cooling unit, and a portion of the supporting surface of said device being of a different contour than the surface of said support and being rockable thereon to break an ice bond therebetween.

1,999,297. HEAT INSULATED CONTAINER. Bayard D. Kunkle, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Dec. 30, 1932. Serial No. 649,541. 8 Claims. (Cl. 220-9.)

1. A heat insulated container comprising, in combination, a container having side walls, a back and on open side; a door frame secured to the container adjacent the open side thereof and having portions extending beyond said side walls; a wall of heat insulating material secured to the back and comprising layers of heat insulating material secured together, said wall of heat insulating material also having portions extending beyond said side walls so that said side walls and said extending portions define a channel; a heat insulating covering for the side walls comprising a continuous strip of corrugated heat insulating material wrapped around the side walls in said channel so that joints are effected between said extending portions and the heat insulating covering; and means sealing the joints so that static air is confined in the corrugations.

1,999,473. TEMPERATURE REGULATING SYSTEM. Mendel Osnos, Berlin, Germany, assignor to Telefunken Gesellschaft fur Drahtlose Telegraphie m. b. H., Berlin, Germany, a corporation of Germany. Application Jan. 28, 1932. Serial No. 589,446. In Germany Feb. 7, 1931. 12 Claims. (Cl. 236-1.)

2. In combination in a temperature regulating system, a container, a fluid of predetermined specific gravity within said container, means to heat said fluid, and a body, whose temperature is to be regulated, of substantially the same specific gravity as said fluid within said container and surrounded by said fluid.

1,999,495. AIR CONDITIONING APPARATUS. Birger V. Zamore and Henry Edward Sperling, Toledo, Ohio. Application March 13, 1933. Serial No. 660,490. 9 Claims. (Cl. 126-113.)

1. An air conditioning apparatus having a furnace provided with a fire box, an ash pit beneath said fire box, and a spray chamber beneath said ash pit having an air inlet, said apparatus comprising means for spraying liquid into said spraying chamber for impingement against a heated wall of said ash pit, and means providing an air duct leading laterally from said spray chamber and thence upwardly along the side of said furnace in heat-exchanging relation thereto.

1,999,496. STREAM-LINE FLOW VALVE. James L. Adams, Jr., Youngstown, Ohio. Application Dec. 8, 1933. Serial No. 701,456. 20 Claims. (Cl. 137-139.)

20. In a fluid control valve, a substantially floated valve-element mounted in approximate hydrostatic balance an enclosing shell containing seat-rings of elastic and compressible non-metallic material, and power-shifting means applied operatively to rotate said valve-element, and providing compression contact thereof with said seat-rings at substantially the closed valve positions only.

1,999,592. VALVE. Robert William Leach and William Henry Bateman, Newport, England. Application March 14, 1932. Serial No. 598,706. In Great Britain May 9, 1931. 6 Claims. (Cl. 251-84.)

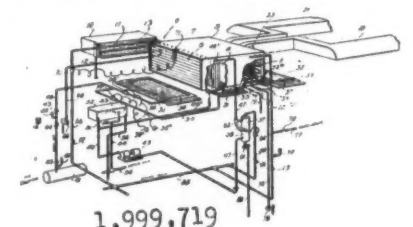
1. In a valve, a rotary disc having an aperture at one side of its axis, a seating complementary to said disc and having a passage adapted to coincide with said aperture at one rotational position of said disc, said disc and seating having working faces, and an endless annular lubricant groove in one of said faces, said groove presenting a larger area to the other of said faces at one side of the axis of said disc than at the other side of said axis.

1,999,595. REFRIGERATING SYSTEM. Damian L. Reynolds, Hillsboro, Calif. Application May 2, 1932. Serial No. 608,699. 23 Claims. (Cl. 62-20.)

18. In a refrigerator car having a cargo compartment and an ice bunker, means for collecting the liquid resulting from the melting ice, a conduit above the liquid level and having an intake portion extending to the collecting means, said conduit passing into the cargo compartment, and means active upon reaching a definite level of collected liquid to initiate a siphon action through the conduit.

1,999,719. AIR-CONDITIONING APPARATUS AND METHOD FOR PASSENGER CARS. Jesse H. Davis, Baltimore, Md., assignor to B. F. Sturtevant Co., Hyde Park, Boston, Mass., a corporation of Massachusetts. Application Jan. 15, 1931. Serial No. 508,996. 22 Claims. (Cl. 257-7.)

1. The method of conditioning the air in a passenger vehicle, which consists in passing the air through a course, humid-



1,999,719

ifying and purifying the air in its travel through such course, heating the air in its travel through such course, and recirculating the air through a course including more or less of the first course, and in such recirculation of the air re-humidifying and re-heating the air or heating the air without humidification or recirculating the air without re-humidification or re-heating.

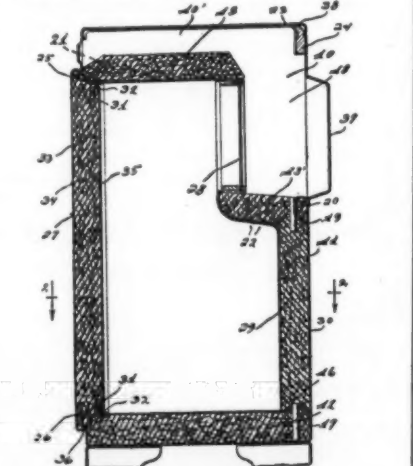
1,999,720. AIR CONDITIONING APPARATUS AND METHOD FOR PASSENGER CARS. Jesse H. Davis, Baltimore, Md., assignor to B. F. Sturtevant Co., Hyde Park, Boston, Mass., a corporation of Massachusetts. Original application Jan. 15, 1931. Serial No. 508,996. Divided and this application Sept. 25, 1933. Serial No. 690,834. 8 Claims. (Cl. 257-7.)

6. The method of conditioning air and continuously distributing it at different points in the space occupied by passengers in railway cars, which consists in taking outside air into a conditioning chamber arranged in the roof zone of the car, moistening and filtering the air with a water spray and passing it over heaters in said zone, driving it through one or more ducts in the half deck zone of the car and distributing it at intervals throughout the passenger containing space of the car, and recirculating the air between the passenger containing space and conditioning chamber and mixing it with intake outside air, and re-conditioning the air in said chamber for redistribution.

1,999,770. FILTER AND METHOD OF MAKING IT. Jesse T. Littleton, Corning, N. Y., assignor to Corning Glass Works, Corning, N. Y., a corporation of New York. Application June 18, 1934. Serial No. 731,206. 8 Claims. (Cl. 49-82.)

1. The method of making a glass filter, which includes arranging a plurality of glass rods in spaced parallel relation, supporting a plurality of similar rods in spaced parallel relation on the first mentioned rods with their axes crossing the axes of the first mentioned rods, and heating the rods so arranged to cause them to adhere to one another.

1,999,798. REFRIGERATOR CABINET. Albert P. Ball, Detroit, Mich., assignor to Briggs Mfg. Co., Detroit, Mich., a



1,999,798

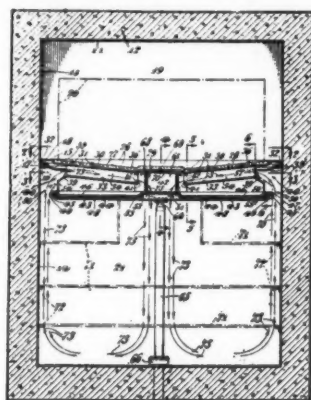
corporation of Michigan. Application Oct. 26, 1931. Serial No. 571,245. 3 Claims. (Cl. 220-9.)

3. A refrigerator cabinet comprising a

self-sustaining walled cabinet structure of insulating material, said walled structure comprising a plurality of relatively rigid one-piece sections, each formed from a single piece of insulating material and arranged to form an enclosing wall of the structure, said sections having their adjacent edges lapped in abutting relation, means for joining said lapped edges together to provide a self-sustaining walled structure of insulating material without supplemental supporting means for the sections, and metal panelling angularly formed to cover said sections, the junctures thereof and said joining means.

1,999,839. REFRIGERATOR. Albert L. Lambert, Narberth Borough, Pa., assignor to Heintz Mfg. Co., a corporation of Pennsylvania. Application May 17, 1933. Serial No. 671,426. 16 Claims. (Cl. 62-46.)

1. In a refrigerator construction, a cabinet, an ice tray of heat conducting material extending thereacross and dividing

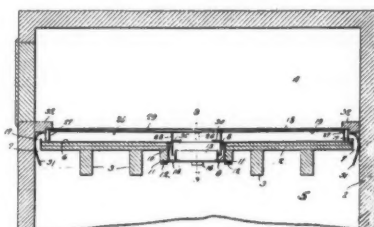


1,999,839

the same into an upper ice compartment and a lower food compartment, a laterally closed open-ended flue of heat conducting material inclined downwardly from one end to the other and secured to the under side of said tray to direct the air current in said food compartment across the lower surface of said tray, means for deflecting the air current into said flue, said tray having a plurality of perforations therein opening into said flue, and a drip pan beneath the lower end of said flue.

1,999,899. REFRIGERATOR. Everett E. Fowler, New York, N. Y. Application March 22, 1933. Serial No. 662,147. 29 Claims. (Cl. 62-46.)

1. A refrigerator including an ice supporting grid comprising superposed plates having nested corrugations contacting



1,999,899

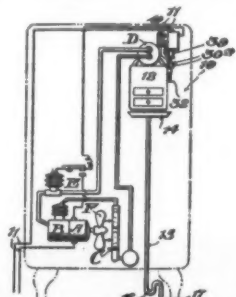
along their bottoms to provide air passages therebetween closed at their sides.

1,999,907. REFRIGERATOR. George Lange, New York, N. Y., and Rudolph Sommers and Mackay C. Saylor, Boston, Mass. Application Oct. 25, 1932. Serial No. 639,488. 15 Claims. (Cl. 62-72.)

1. In a refrigerator including an ice chamber and a storage chamber, a pan under the ice chamber having an outlet, a corrugated ice supporting grid providing non-communicating gutters along the top thereof and air conducting channels along the bottom thereof, said channels being closed at the bottom by the pan, there being outlets for the gutters whereby a predetermined level of water is maintained in each gutter and excess water delivered into the pan for movement within and longitudinally of the air channels toward the outlet of the pan.

1,999,930. DEFROSTING. Marcus A. Hirschl, Chicago, Ill. Application June 27, 1929. Serial No. 374,134. 14 Claims. (Cl. 62-4.)

1. In an electrical refrigerator having an evaporator, means for circulating a refrigerant through the evaporator includ-



1,999,930

ing a motor, a switch in the current supply line to said motor, said switch including an insulating housing having terminals for the current supply line led thereto, means rendered electrically conductive by the formation of ice on the evaporator for throwing said switch to open position, and means effective upon a rise in temperature at the evaporator for throwing said switch to its closed position.

1,999,977. REFRIGERATING APPARATUS. William O. Meyer, Buffalo, N. Y., assignor to Meyer Body Co., Inc., Buffalo, N. Y., a corporation of New York. Application May 27, 1933. Serial No. 673,249. 11 Claims. (Cl. 62-91.5.)

1. In a refrigerator, an overhead refrigerant container comprising a body having side and top walls and a separate bottom wall adapted to support a solid refrigerant and means for lowering said bottom in its upper elevated operative position and means for limiting the downward movement of said bottom.

BUYER'S GUIDE

**MANUFACTURERS SPECIALIZING IN SERVICE
TO THE REFRIGERATION INDUSTRY**

SPECIAL ADVERTISING RATE (this column only)—\$12.00 per space.
Payment is required monthly in advance to obtain this special low rate.
Minimum Contract for this column—13 insertions in consecutive issues.

QUESTIONS

List of Service Men

No. 2233 (Manufacturer, Illinois)—“When we recently subscribed to your ELECTRIC REFRIGERATION NEWS and so forth we asked if it was possible for you to give us a list of refrigeration service men all over the country.”

“In your 1935 DIRECTORY you have a partial list of Independent Service Companies.”

“We are building up a service organization all over the country to service our ice cream freezers, and if it is possible, we would like to have a list as mentioned above. If you do not have such a list can you refer us to someone whom you think will have a list of dependable refrigeration service men?”

Answer: The listing of independent service companies included in the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY is the best list that we can offer at this time.

Vapor Heads

No. 2234 (Dealer, Pennsylvania)—“Could you advise us where we could purchase vapor heads for produce counters?”

Answer: We believe that you may be able to obtain vapor heads for produce counters from Tyler Sales Fixture Co., Niles, Mich.

Hillside Compressor

No. 2235 (Dealer, New York)—“Will you kindly let us have the address of the Hillside Compressor Mfg. Co., located in Chicago, Ill.”

Answer: We have no record of this company. We suggest that you write the Chicago Chamber of Commerce.

Compressor Seals

No. 2236 (Dealer, South Carolina)—“Will you be kind enough to furnish me with the names of manufacturers of seals that are used in compressors as installed in modern household electric refrigerators?”

Answer: Manufacturers of seals for household compressors are listed on page 272 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

Lists

No. 2237 (Manufacturer, New York)—“We understand that you are in a position to furnish a list of refrigeration dealers and manufacturers in the United States. We would like to know what the cost of this list would be, and also would like to know whether this can be supplied for the following territory only:

Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Pennsylvania, Maryland, Delaware, and the District of Columbia, and if so, what the cost of this list would be.

Answer: All manufacturers of refrigeration and air-conditioning systems, materials, parts, supplies, and accessories, are listed in the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

We do not have a list of dealers.

50-Cent Coin Meters

No. 2238 (Distributor, California)—“We are attempting to merchandise coin meters for commercial refrigeration installations. We would appreciate advising us where they can be purchased, and how they can be applied—50-cent coin meters for 24-hour schedule.”

Answer: Manufacturers of coin meters are listed on page 253 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

Waukesha Milk Cooler

No. 2239 (Service Company, Pennsylvania)—“Could you give us the specifications of the Waukesha electric milk cooling equipment made by the Waukesha Motor Co., Waukesha, Wis.”

Answer: The original article announcing the Waukesha milk cooler was published in the April 11, 1934, issue of ELECTRIC REFRIGERATION NEWS.

This states that the Waukesha milk cooler is powered by a ¼-hp., four-cycle gasoline engine or its equivalent electric motor and will cool seven 10-gal. cans of milk to 50° F. in one operation.

Air Conditioner Makers

No. 2240 (Distributor, Indiana)—“If the information is available in your files, will you kindly forward to us, the names of some of the more prominent manufacturers of domestic air-conditioning units?”

Answer: Manufacturers of air-conditioning equipment are listed starting on page 15 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

Specifications of leading makes of air-conditioning equipment using re-

frigeration were published in the March 27 issue of ELECTRIC REFRIGERATION NEWS, and will again be published (revised and with additions) in the May 22 issue.

Cabinet Covers & Trucks

No. 2241 (Dealer, Illinois)—“We are interested in a cover and truck suitable for delivering refrigerators.”

Answer: The following companies make refrigerator handling trucks:

Arcade Mfg. Co., Freeport, Ill.
Larmac Co.
1141 Third National Bldg., Dayton, Ohio.
International Engineering, Inc.
1145 Bolander Ave., Dayton, Ohio.
Self Lifting Piano Truck Co.
423 N. Main St., Findlay, Ohio.

Refrigeration covers for protection of cabinets are manufactured by the Bearse Mfg. Co., 3815 Cortland St., Chicago, and the Larmac Co., mentioned above.

A. S. R. E. Address

No. 2242 (Dealer, Virginia)—“Please send us the address of the ‘American Society of Refrigeration Engineers.’”

Answer: 37 West 39th St., New York City.

Piston Ring Specifications

No. 2243 (Manufacturer, Pennsylvania)—“Have you published recently in ELECTRIC REFRIGERATION NEWS, specifications on current models of commercial electric refrigerators, and particularly on the air compressors which are used in them? I would like very much to get this information if it is available.

“What we are particularly interested in are the piston ring diameters and widths as well as the number per piston used in each model of compressor in the various refrigerators. I do not believe you have published the complete piston ring specifications in the past and I am wondering if you happen to have this information in your files.

“Please let me know just what you have available which would be of help to us.”

Answer: The specifications of 1935 models of leading makes of commercial refrigerating machines published in the April 3 issue of ELECTRIC REFRIGERATION NEWS did not include data on piston ring diameters and widths or the number present.

We suggest that you make direct contact with manufacturers for this information.

Electrolux Specifications

No. 2244 (Distributor, Arkansas)—“Can you give us specifications on the Electrolux machine in the same form as you published the specifications of all the electrical domestic refrigerators?”

Answer: Electrolux officials have never seen fit to submit specifications of their household refrigerator for publication in our specifications issue.

A story concerning the 1935 line of Electrolux refrigerators, giving considerable information concerning the various models, was published in the Jan. 23 issue of ELECTRIC REFRIGERATION NEWS.

Merchandising Setup

No. 2245 (Supply House, Oklahoma)—“Please send us a list of the manufacturers of electric refrigerators in the United States, and adding, if possible, whether their sales policies are open through agencies or direct. Thank you for this cooperation.”

Answer: Manufacturers of household electric refrigerators are listed on pages 235, 248, and 249 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

The large manufacturers all operate through distributor-dealer set-ups; and about a dozen or more of the large companies sell to between 50 and 100 distributors, who in turn sell to a large number of dealers.

‘Basco Tradename’

No. 2246 (Association, Illinois)—“Can you furnish us the name of the refrigerator manufacturer who uses the trade name ‘Basco?’”

Answer: We have no record of the trade name ‘Basco’ being used by any refrigerator manufacturer.

The trade name most closely corresponding to this in our records is ‘Bastieco,’ which is manufactured by the Bastian-Blessing Co., 240 East Ontario St., Chicago, Ill.

Hardware for Cooler

No. 2247 (Dealer, Ohio)—“Please advise us where we might buy hardware for a reach-in cooler. We retail display cases with commercial refrigeration and wish an outlet for the purchase of supplies on a distributor-dealer basis.”

Answer: Manufacturers of hardware for commercial refrigerator cabinets are listed on page 180 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

CLASSIFIED

RATES: Fifty words or less, one insertion \$2.00, additional words four cents each. Three insertions \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Electric Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

WANTED, ENGINEER (willing to go to foreign country) thoroughly experienced in manufacturing and production of domestic and commercial refrigerators, compressors, evaporators, cabinets, etc. Address reply to attention A. D. Mintz, Carr Brothers, Inc., 120 Broadway, New York.

OPENING for thoroughly experienced graduate Refrigeration Engineer on new development project. Application by letter only, telling prior employers, references, salaries paid, etc. Box 700, Electric Refrigeration News.

WANTED, WORKSHOP FOREMAN (willing to go to foreign country) thoroughly experienced in manufacturing and production of domestic and commercial refrigerators, compressors, evaporators, cabinets, etc. Address reply to attention A. D. Mintz, Carr Brothers, Inc., 120 Broadway, New York.

MANUFACTURER'S AGENT proposition for Detroit area on commercial evaporators, domestic air-cooled condensers, blower units, expansion valves, and controls available to experienced refrigeration man. Box 702, Electric Refrigeration News.

POSITIONS WANTED

SERVICE MAN with ten years' experience on sulphur dioxide, methyl chloride, and Freon machines desires position in Michigan. Commercial work preferred. Thoroughly familiar with air conditioning. Box 701, Electric Refrigeration News.

EQUIPMENT FOR SALE

ATTENTION: Dealers and Service Men—Rebuilt Mayson Expansion Valves, \$1.00. Rebuilt American Radiator Expansion Valves, \$1.65. Fully guaranteed. Also Ranco controls, type DH and others, \$1.95. Other surplus, miscellaneous parts in stock, such as legs, shelves, porcelain evaporator baffles, at ridiculous prices. Hundreds of fully reconditioned, nationally-known refrigerators, priced right for retail re-sale. Federal Refrigerator Corp., 437 Eleventh Ave., New York, N. Y.

FRANCHISE AVAILABLE

WANTED, DISTRIBUTORS—Wanted, district distributors to sell to retail trade exclusively, new and reconditioned electric and gas refrigerators of nationally known makes, at greatly reduced prices; fully guaranteed. Full protection to territory rights. For domestic and export trade, catalogues, prices and specifications on request. Wanted, resident buyers to purchase for us in quantities, old and new refrigerators. Exclusive territory. Interstate Refrigerator Corp., 96 Fifth Ave., New York, N. Y.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. Van Deventer (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

REPAIRS

HALELECTRIC thermostat repair service. B & B, G.E., Cutler-Hammer, Penn. Ranco, Tag, etc. Expansion valves repaired. Gas service, Ethyl, Methyl, Iso-Butane, Sulphur. Your cylinder or ours. Competitive prices. Halelectric Laboratory, 1793 Lakeview Road, Cleveland, Ohio.

HOW DO WE TRAIN MEN?



Exactly the way you want them trained, Mr. Executive

Utilities Engineering Institute's course of training in installing and servicing all types of refrigeration equipment was prepared with the cooperation of leading Engineers and Executives in the industry. We asked . . . “What training do you want your employees to have, to make them most capable and efficient?”

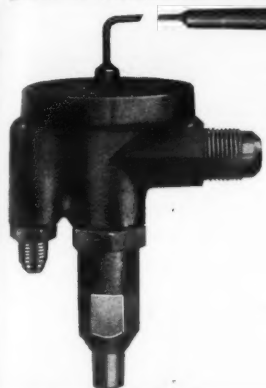
We constructed the U. E. I. course of instruction in refrigeration engineering on the opinions and suggestions offered.

This means that when you get a U. E. I. man you may be sure he is practically, thoroughly and authoritatively trained . . . ready to give you capable service.

We offer our services to those desiring either personal training or the services of trained men.

Founded 1927

UTILITIES ENGINEERING INSTITUTE
404 N. Wells St. Chicago, Ill. 1841 Broadway New York, N. Y.



PEERLESS THERMAL EXPANSION VALVES

for Methyl Chloride, Sulphur Dioxide, Freon, and Ammonia

1. No bellows to leak.
2. No possibility of moisture condensation interfering with valve action.
3. Tried and proven in every section of the country.
4. Competitively priced.

PEERLESS ICE MACHINE CO.
CHICAGO TWO FACTORIES NEW YORK
515 W. 35th St. 43-00 36th St., L.I.C.



THE TRADEMARK OF FOUR PACE SETTERS IN COIL EFFICIENCY

SUR-E-FEX Fin Coils
FAN-E-FEX Diffusing Units
HUM-E-FEX Non-Dehydrating Coils
AIR-E-FEX Air-Conditioning Units

SEND FOR NEW CATALOG DESCRIBING THESE SENSATIONAL DEVELOPMENTS
REFRIGERATION APPLIANCES, INC.
H. J. KRACKOWIZER, Pres.
1342 WEST LAKE ST., CHICAGO

DAYTON V-BELTS

There is a Dayton V-Belt made especially for all makes and types of refrigerators, washing machines and other appliances. A stock is available near you. Send for price list and name of your nearest distributor.

THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO

The world's largest manufacturer of V-Belts



Rempe "FIN COIL" Co.

Steel Copper
Aluminum

340 N. Sacramento Blvd.

Chicago, Illinois Kedzie 0483

Pipe Coils and Bends Send for catalog, price list and sample

Methyl Chloride, Freon, Sulphur Dioxide and Ammonia

Group Subscription Rates

The following special rates are for PAID-IN-ADVANCE subscriptions only in the United States and Possessions and Pan-American Postal Union Countries. Charge orders are billed at the single-subscription rate, regardless of number. Papers will be mailed to individual addresses.

	Electric Refrigeration News (weekly)	1935 Refrigeration Directory and Market Data Book (2 volumes)	Both Electric Refrigeration News and Refrigeration Directory
1 subscription	\$3.00	\$5.00	\$6.50
5 or more each	2.75	4.50	6.50
10 or more each	2.50	4.00	6.50
20 or more each	2.25	3.50	5.75
50 or more each	2.00	3.00	5.00
75 or more each	1.75	2.50	4.25
100 or more each	1.50	2.00	3.50

For All Other Countries (Except Canada)

1 subscription	\$5.00	\$6.00	\$9.00
5 or more each	4.75	5.50	8.50
10 or more each	4.50	5.00	8.00
20 or more each	4.25	4.50	7.50
50 or more each	4.00	4.00	7.00

Canadian Rates (including tariff of 5 cents per copy on the News)

1 subscription	\$6.00	\$6.00*	\$11.00*
5 or more each	5.75	5.50*	10.50*
10 or more each	5.50	5.00*	10.00*
20 or more each	5.25	4.50*	9.50*
50 or more each	5.00	4.00*	9.00*

*Canadian subscribers are required to pay a tariff and excise tax on the Directory and Market Data Book which amounts to \$2.59. These extra charges on books will be collected by the Canadian postoffice at the time of delivery.

Subscription Order

Business News Publishing Co.
5229 Cass Ave., Detroit, Mich. Date.....

- ☐ Enter my subscription to Electric Refrigeration News for one year (52 issues).
☐ Send the 1935 Refrigeration Directory and Market Data Book (2 volumes).
☐ Enclosed find remittance. (See rates above.)

Name

Attention of

In Care of

Street Address City and State.....

We sell the refrigerator and
(Please indicate other products or principal line of business.)

5-15-35